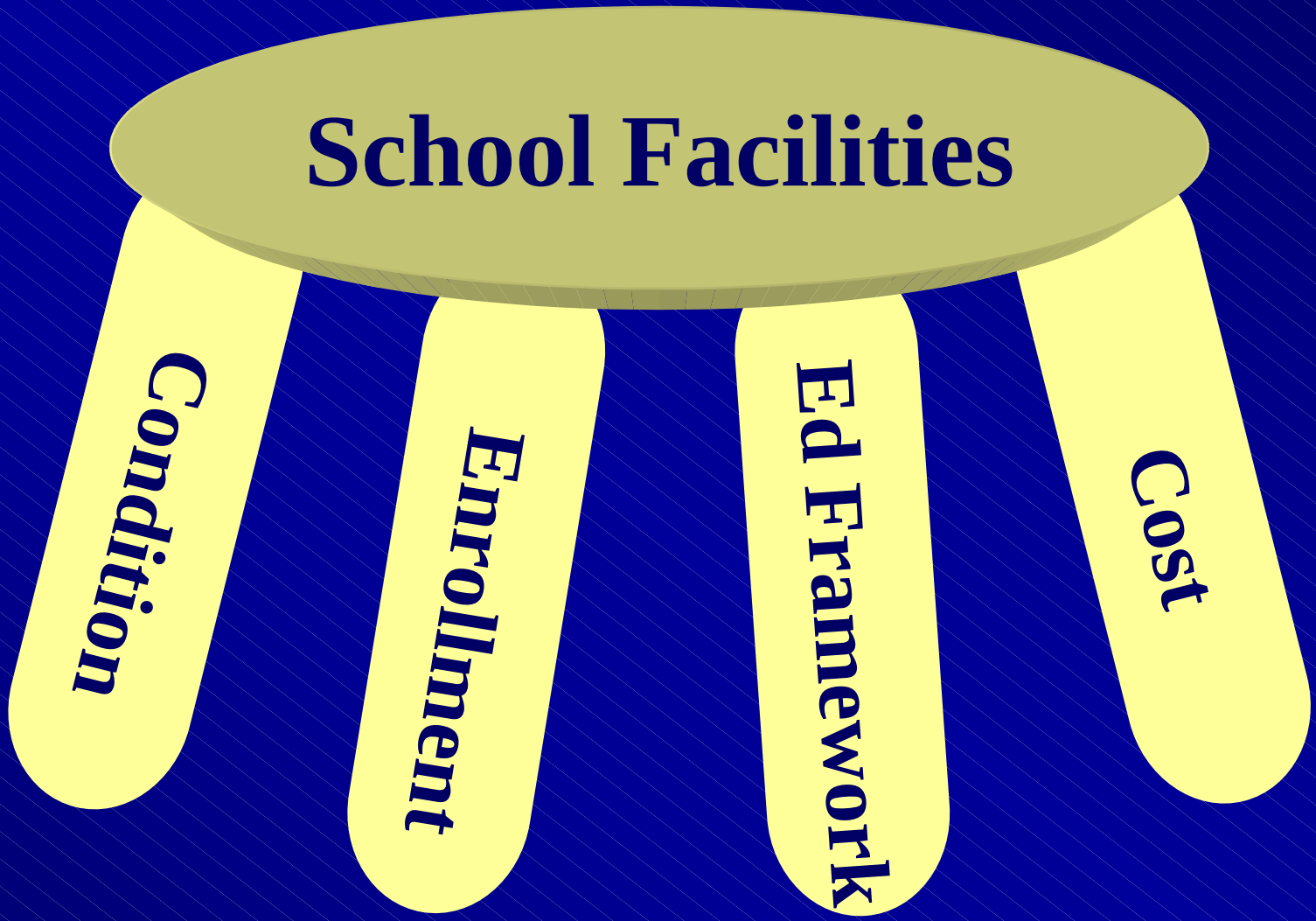
Task Force to Joint Committee on Educational Facilities

Educational Framework Session

Robinson Center

May 12, 2004

9:00 a.m. – 4:00 p.m.



Facility Standards/Guidelines

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TRENDS IMPACTING SCHOOL DESIGN

- 1. Demographic
- 2. Economic
- 3. Technological
- 4. Educational

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Demographic Trends

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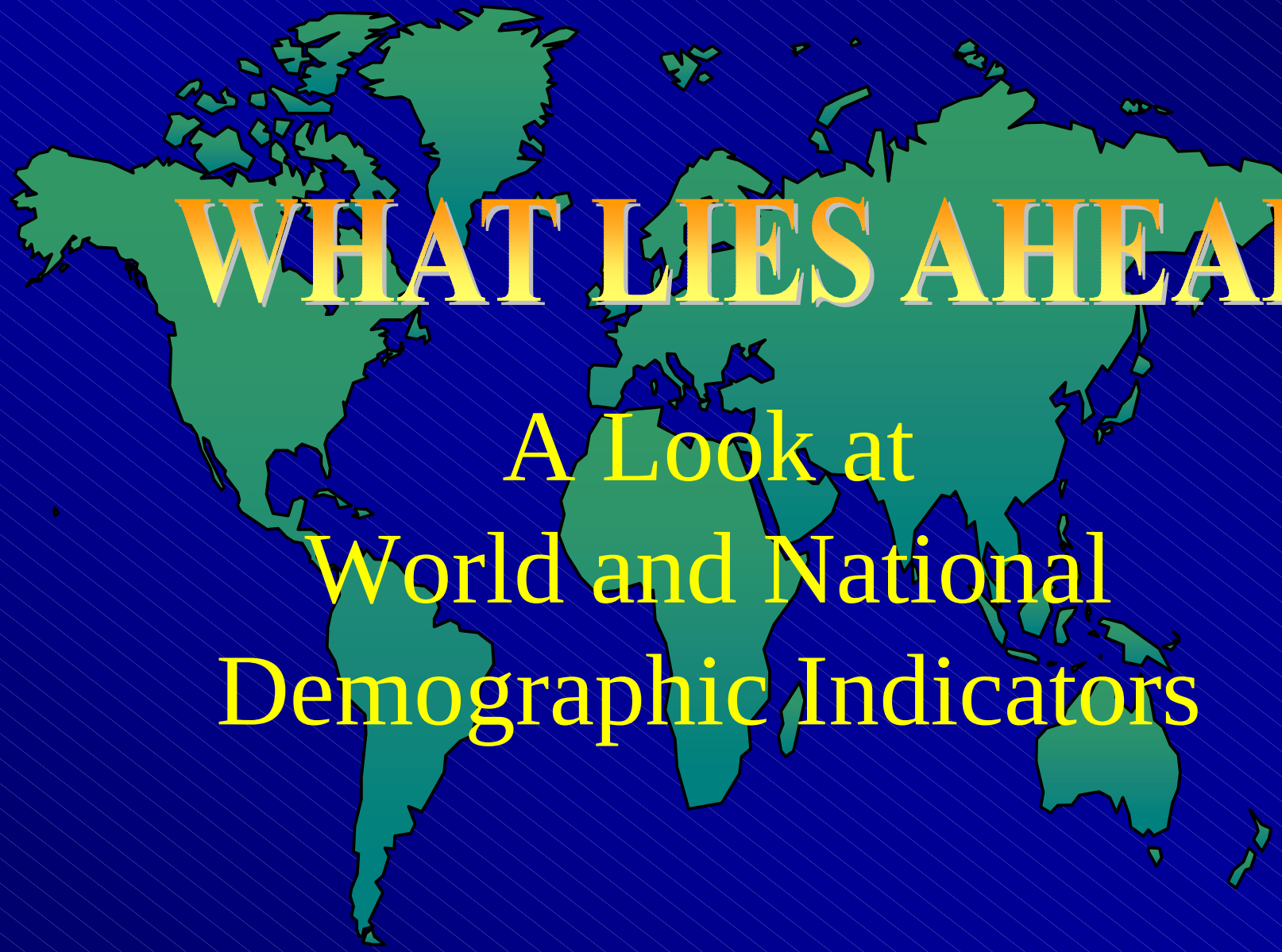

WHAT LIES AHEAD

A Look at
World and National
Demographic Indicators

Current World Population

WORLD POPULATION

Microsoft PowerPoint SlideShow

and growing.

Microsoft PowerPoint Presentation

Source: U.S. Census Bureau, June 6, 1999

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Growth in the General Population

The world's population passed 6 billion in 1998 and is steadily increasing.

Source: USA Today Snapshot and Population Reference Bureau

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Breakdown of
Vital Statistics

WORLD POPULATION

77 million people per year

6.5 million per month

211,839 per day

8,827 per hour

147 per minute

2.5 per second

Source: U.S. Census Bureau, June 6, 1999

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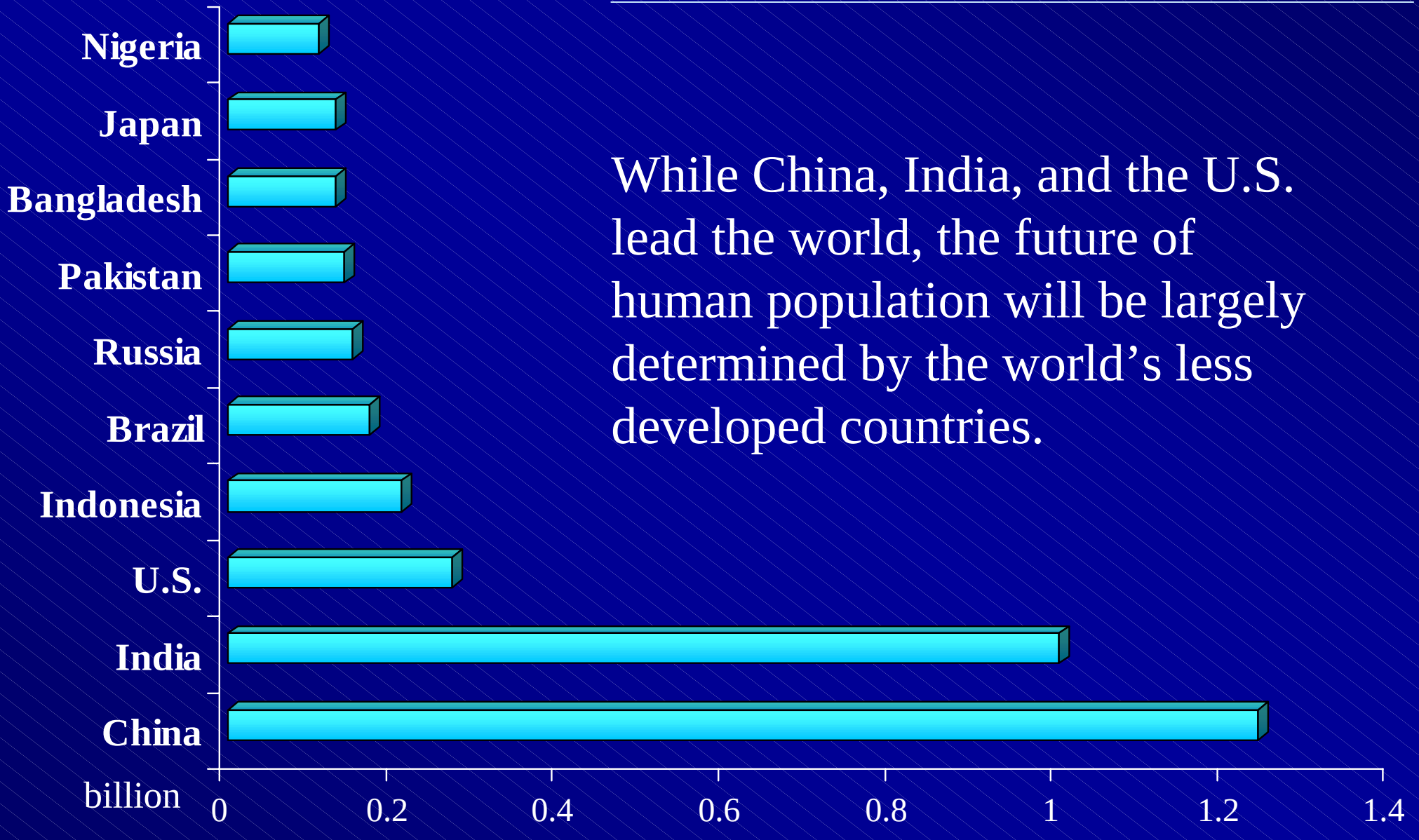
WORLD POPULATION



While China, India, and the U.S. lead the world, the future of human population will be largely determined by the world's less developed countries.

Source: U.S. Census Bureau, International Data Base, 5/24/99

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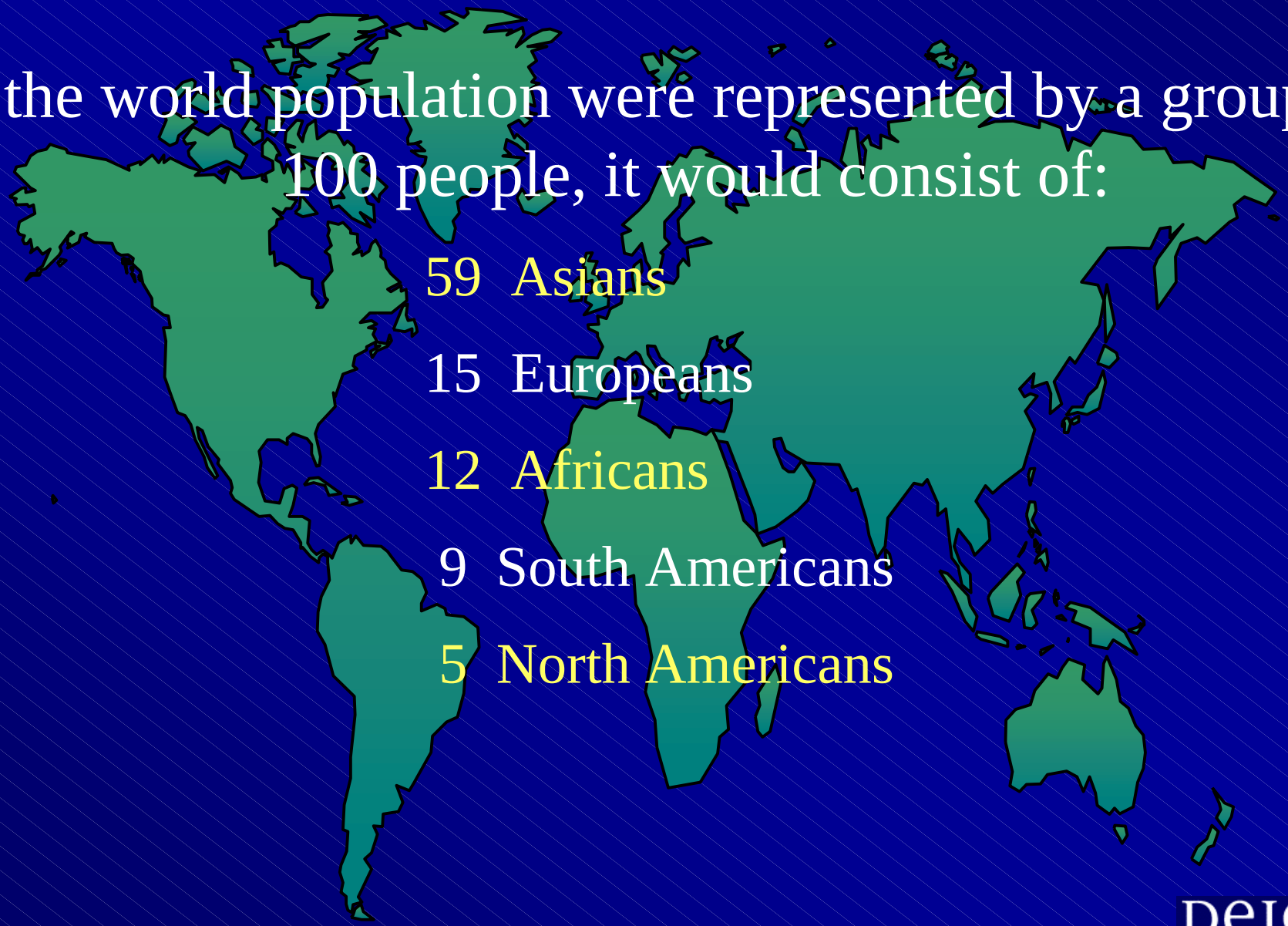
GLOBAL VILLAGE

Population Breakdown
by Ethnicity



If the world population were represented by a group of 100 people, it would consist of:

59 Asians

15 Europeans

12 Africans

9 South Americans

5 North Americans

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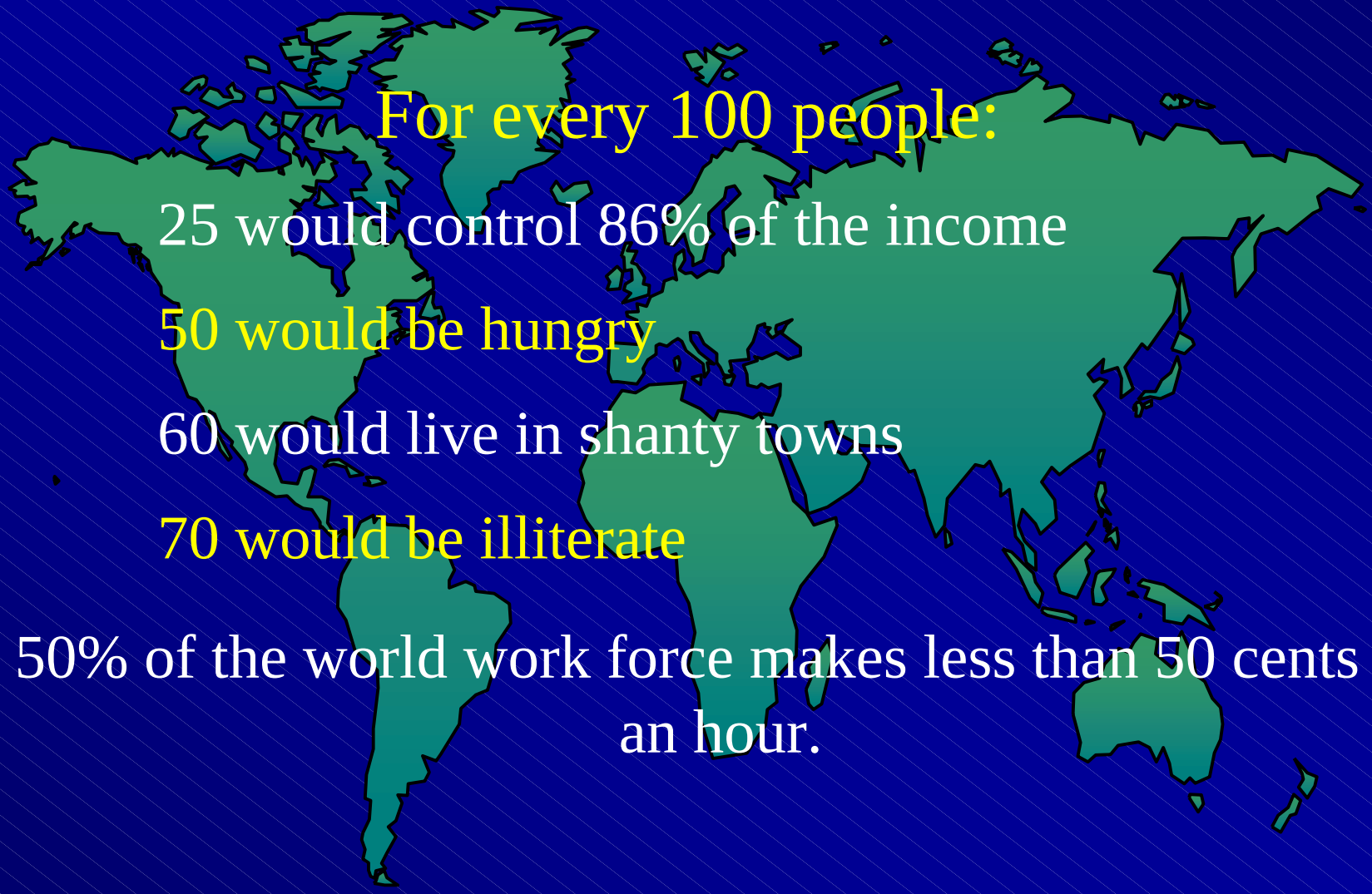
Population Breakdown by Disadvantaged Statistics

GLOBAL VILLAGE



For every 100 people:

25 would control 86% of the income

50 would be hungry

60 would live in shanty towns

70 would be illiterate

50% of the world work force makes less than 50 cents an hour.

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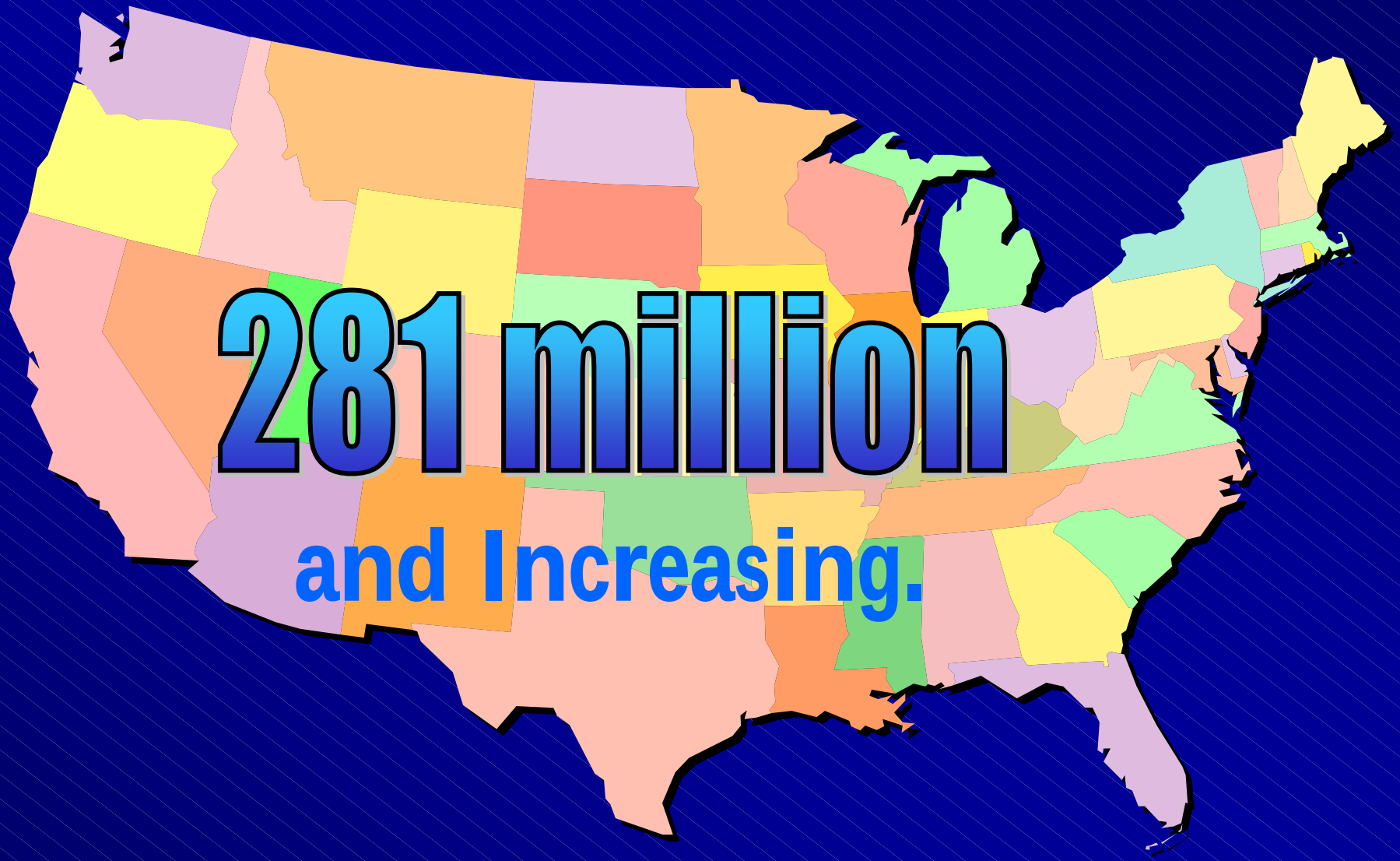
The United States' elderly population will equal or outnumber its youth by the year 2050.

The youth population will make a comeback shortly thereafter.

U.S. POPULATION

Current United States Population



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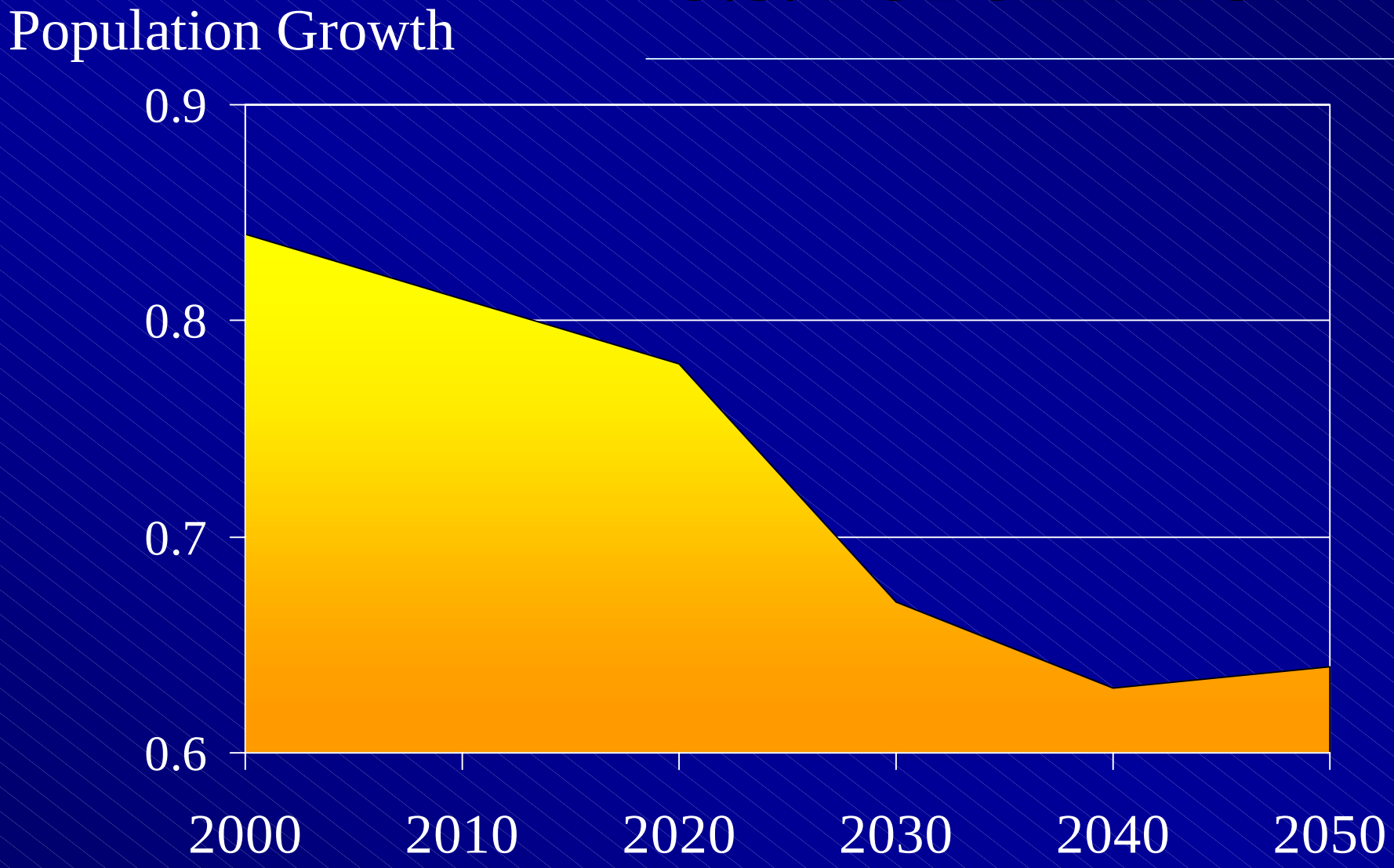
Source: U.S. Census Bureau, May 19, 1999

U.S. POPULATION



U.S. population is increasing, but the rate of increase is slowing down.

Source: U.S. Census Bureau, June 22, 1999

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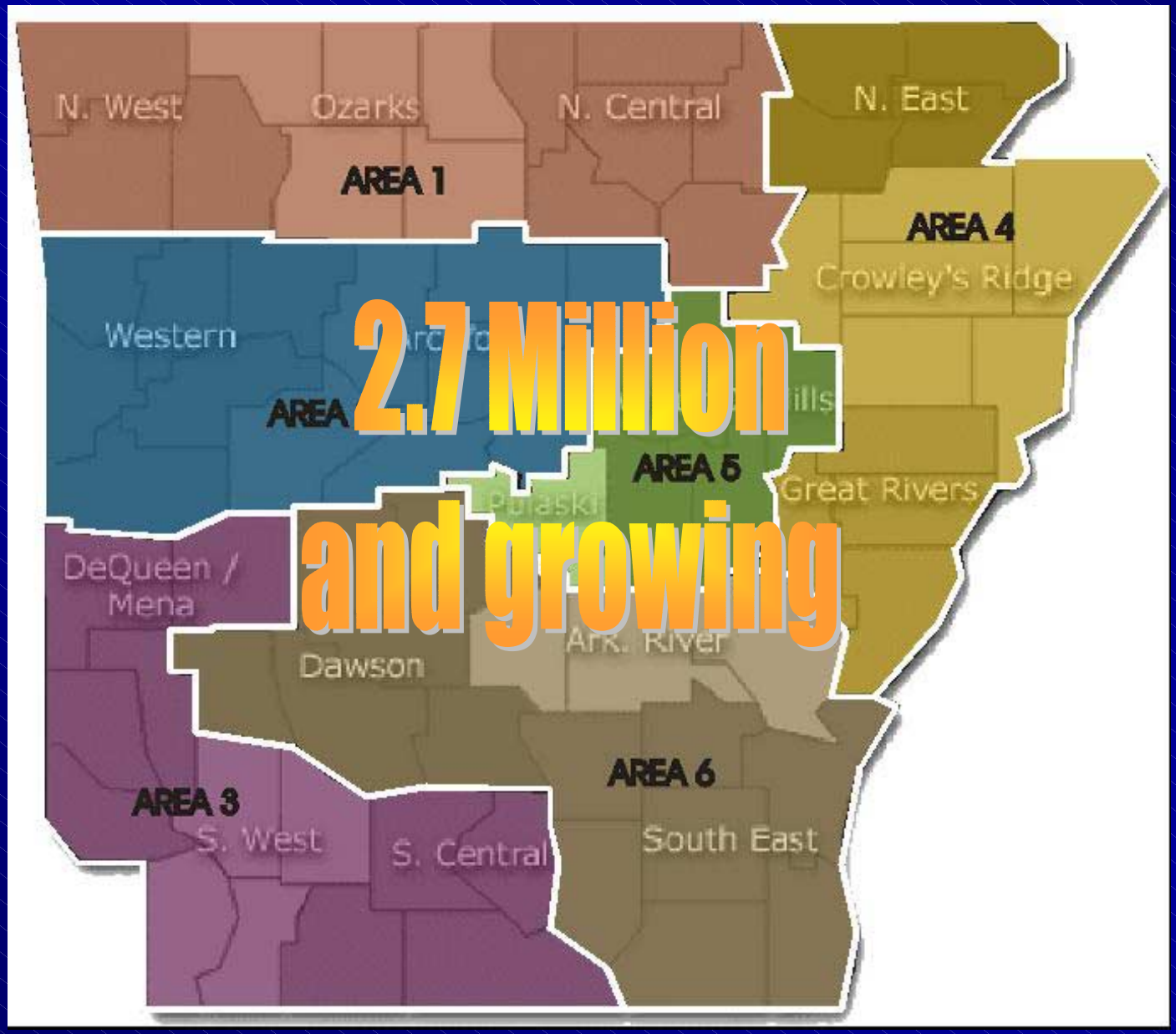
Arkansas Population



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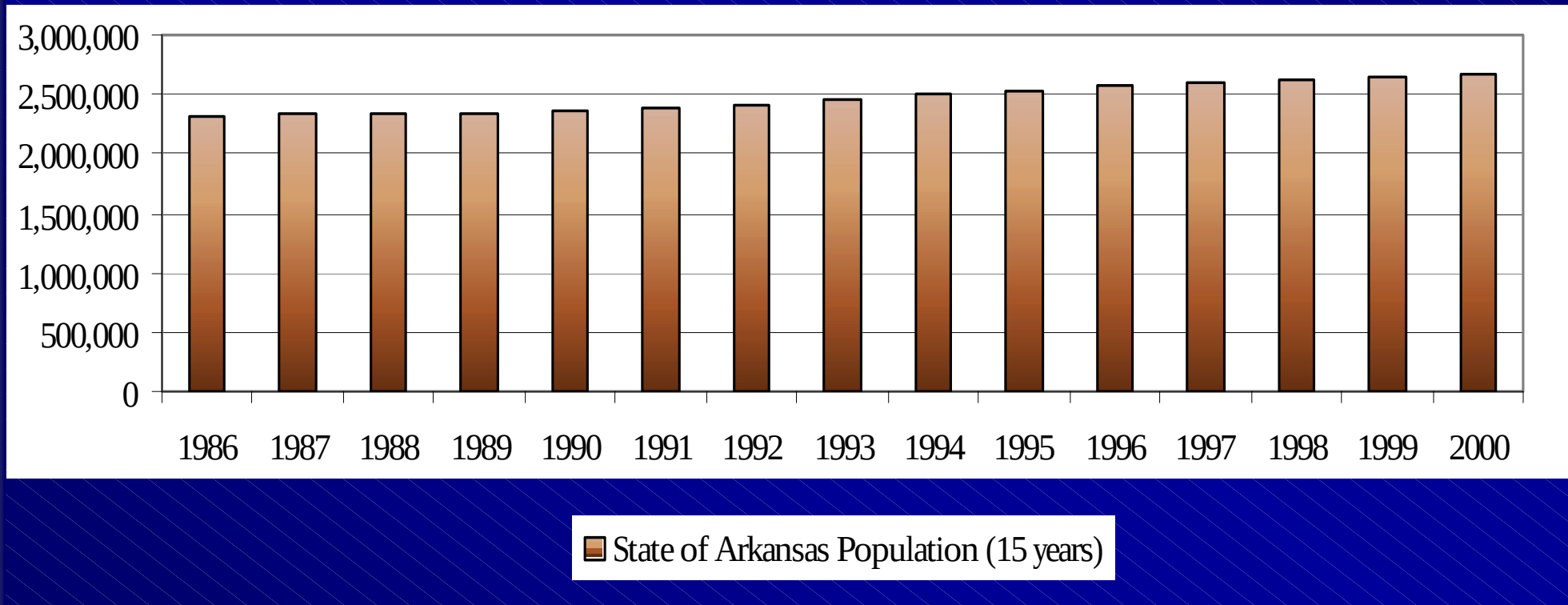
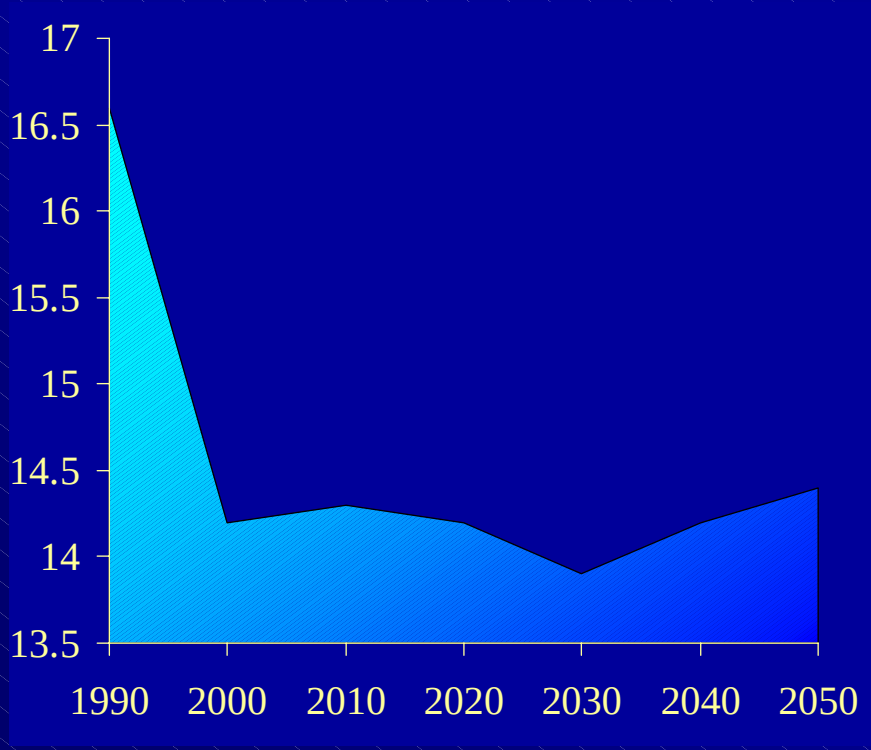
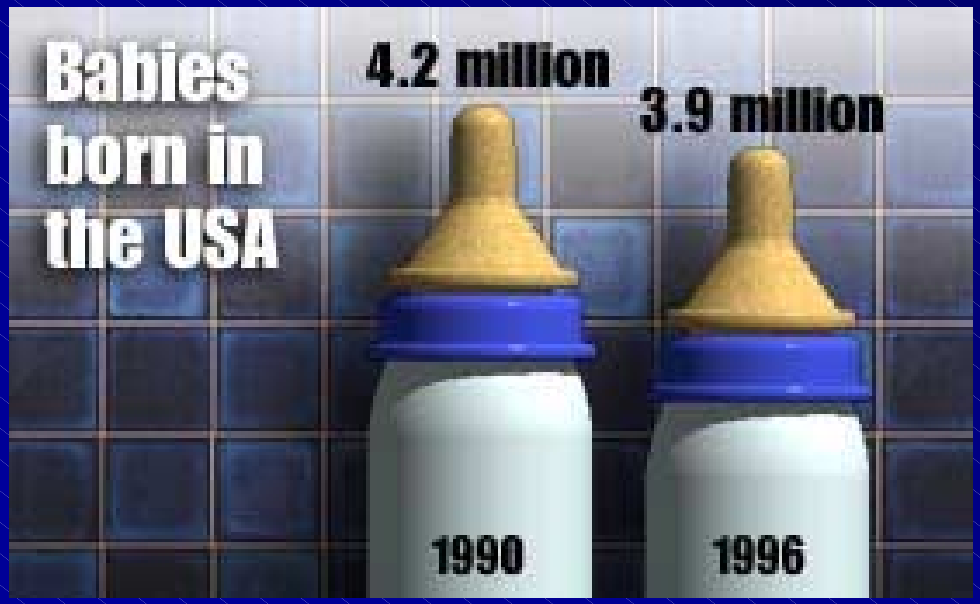
Arkansas Population Statistics



United States Population

Birth rates will continue to slow until the year 2050.

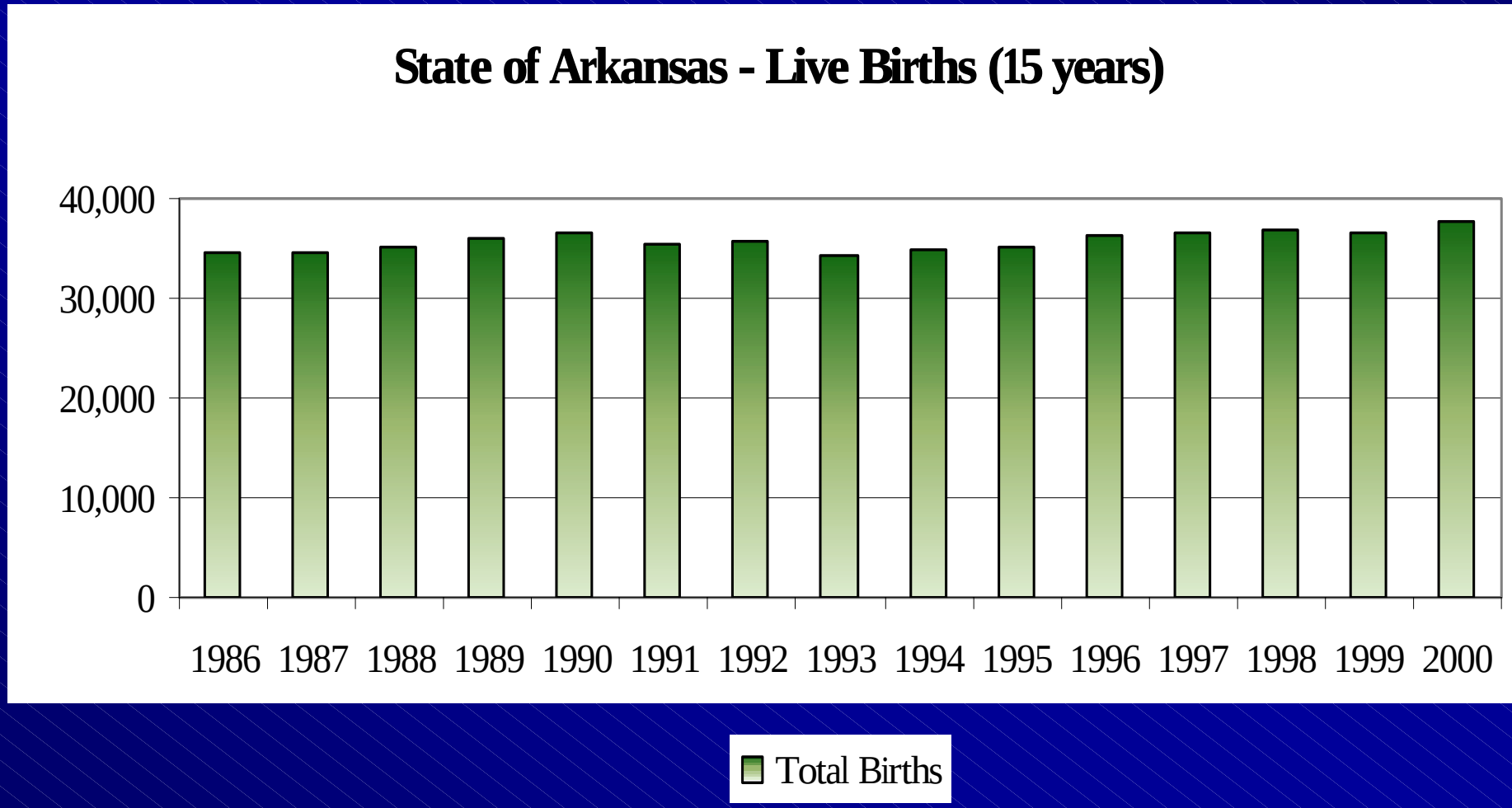




While population continues to increase, birth rates are slowing down.

Source: U.S. Census Bureau, USA Today, Snapshots

Arkansas Birth Data



ECONOMIC TRENDS

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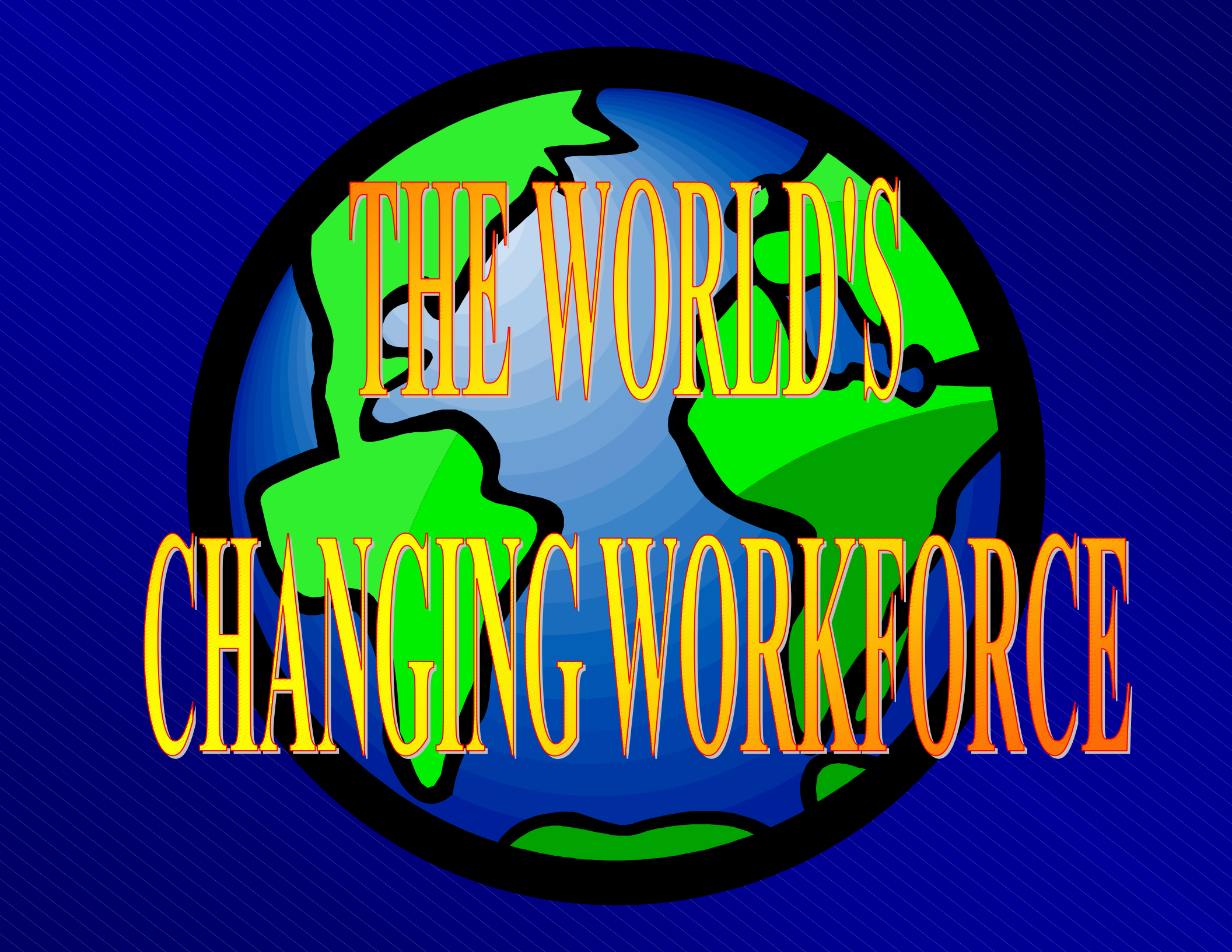
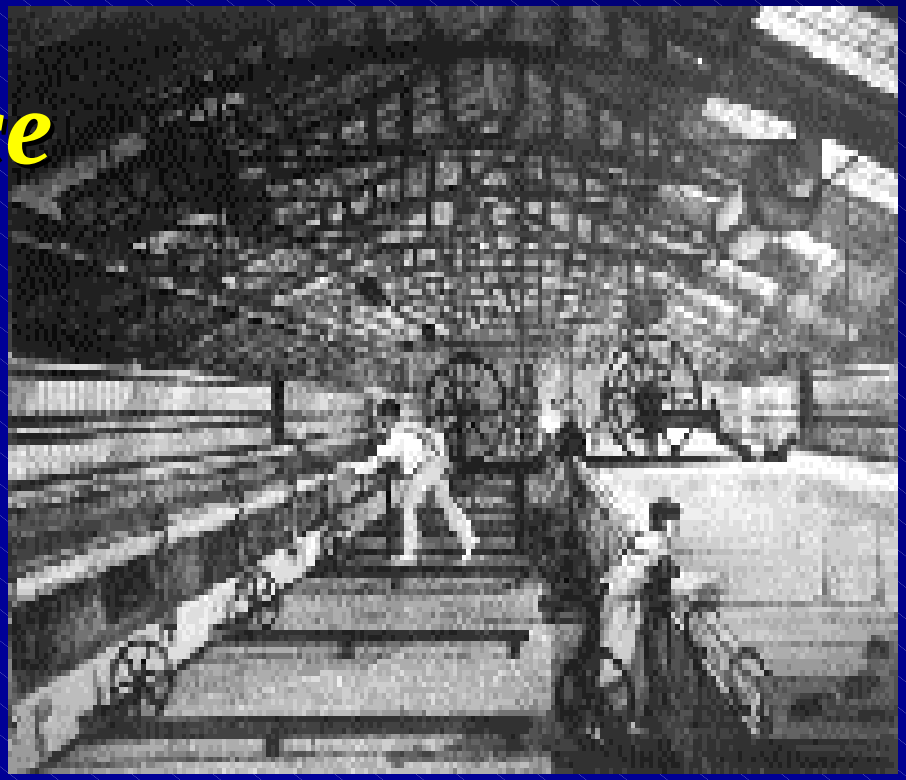

THE WORLD'S
CHANGING WORKFORCE

CHANGING WORKFORCE

"The American workforce is undergoing its most radical metamorphosis since the Industrial Revolution…"



-Robert Tappan,
President of Tappan Communications,
Washington D.C.

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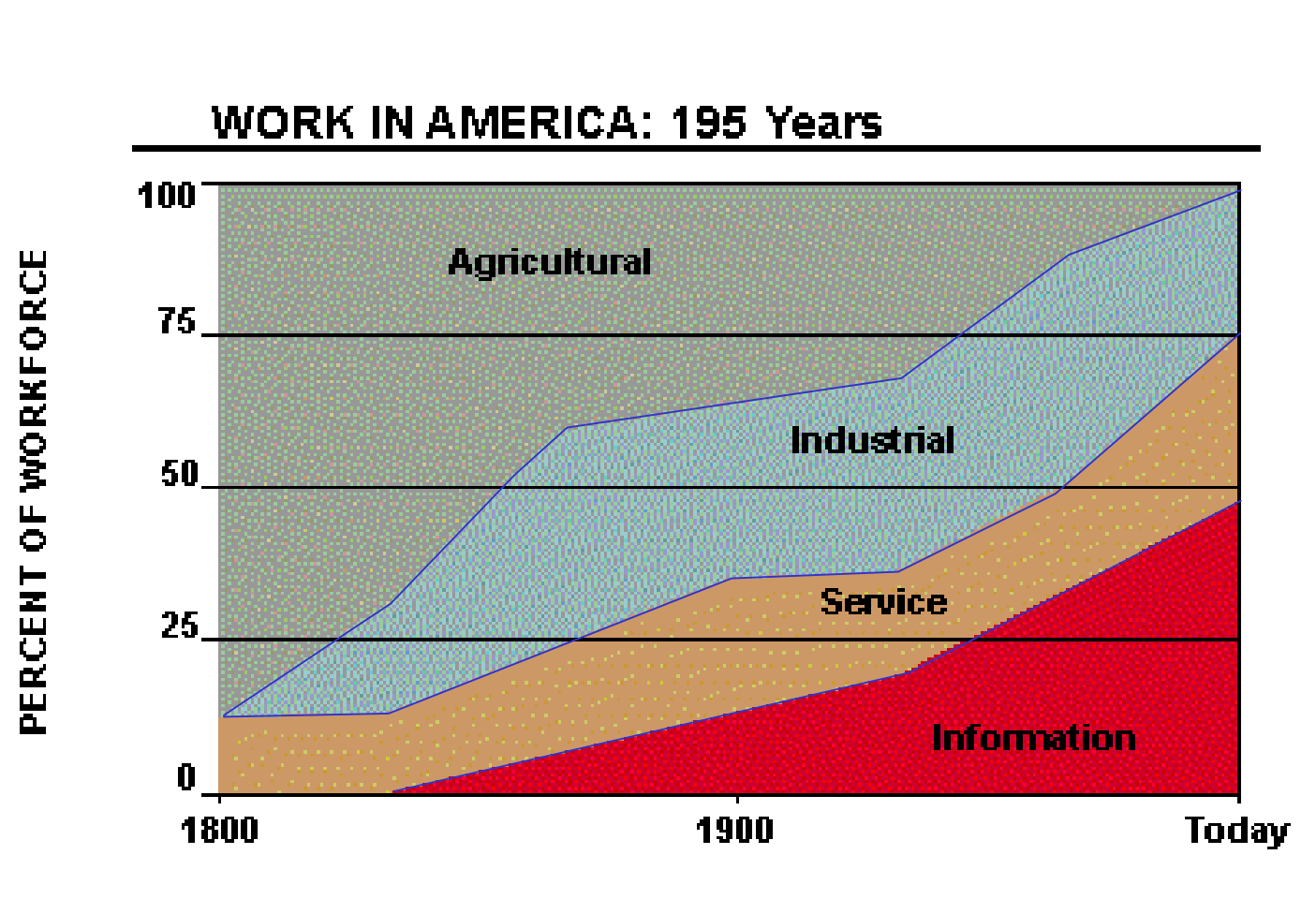
JOB OPENINGS



The fastest growing occupations reflect growth in computer technology and health care services.

Source: http://www.nap.edu/readingroom/books/techgap

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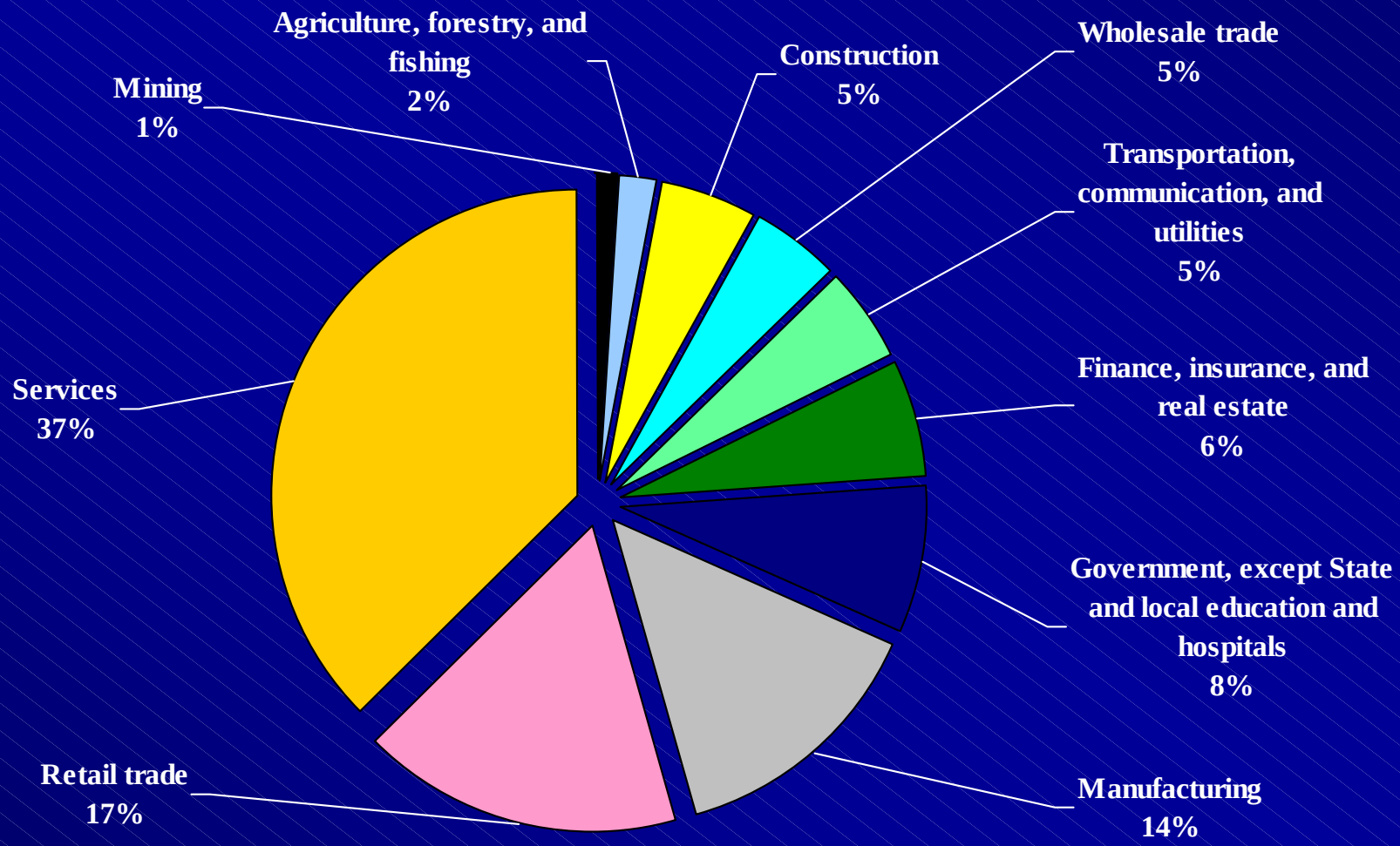
Industry Employment

Wage-and-salary employment by industry division, 2000



Source: U.S. Bureau of Labor Statistics, Occupational Outlook Quarterly, Winter 2001-02

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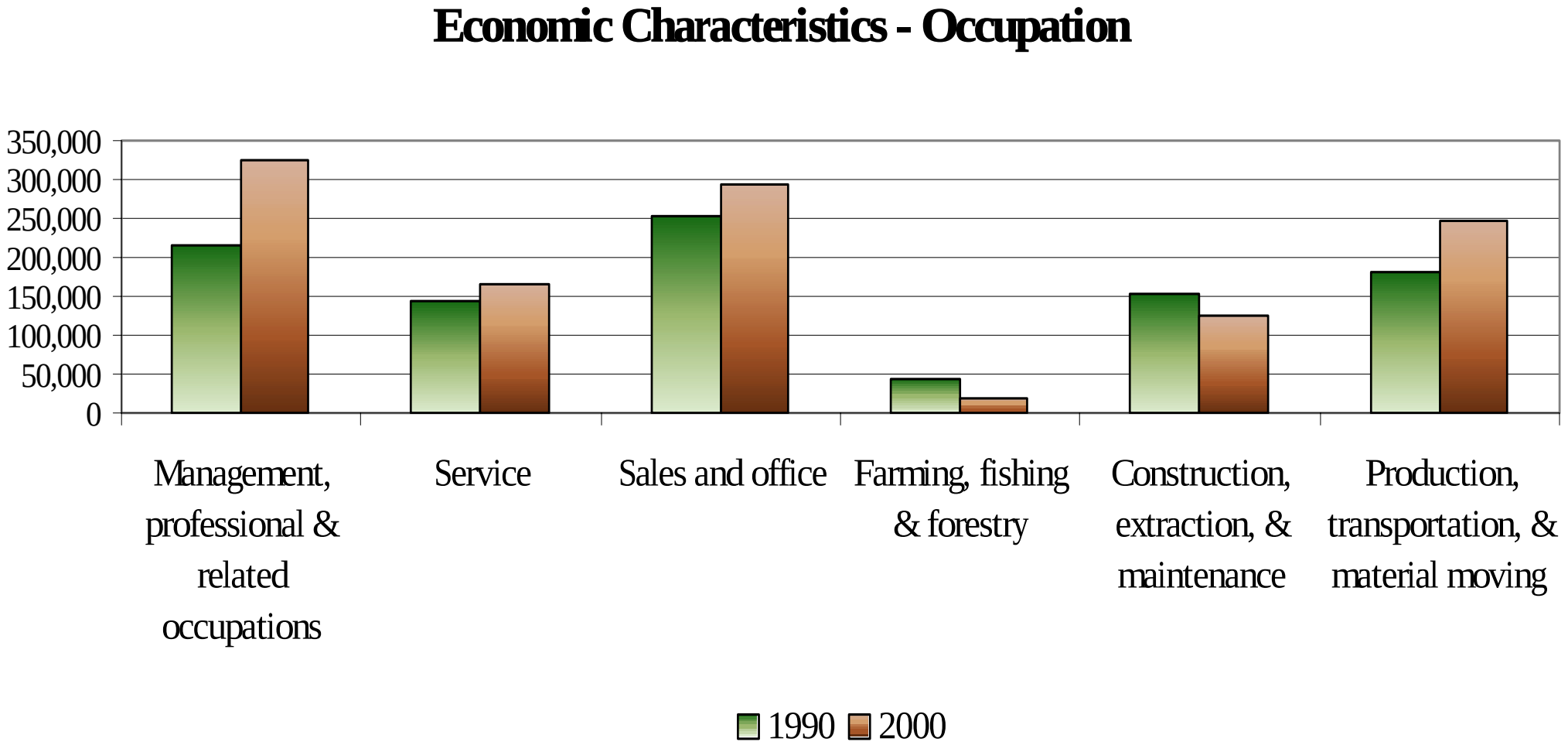
Arkansas Economic Characteristics – Labor Force

Labor Force	1990	2000
Total	1,077,151	1,255,828
Civilian Employed	994,289	1,173,399
Civilian Unemployed	72,079	76,147
Not in Labor Force	722,905	816,240

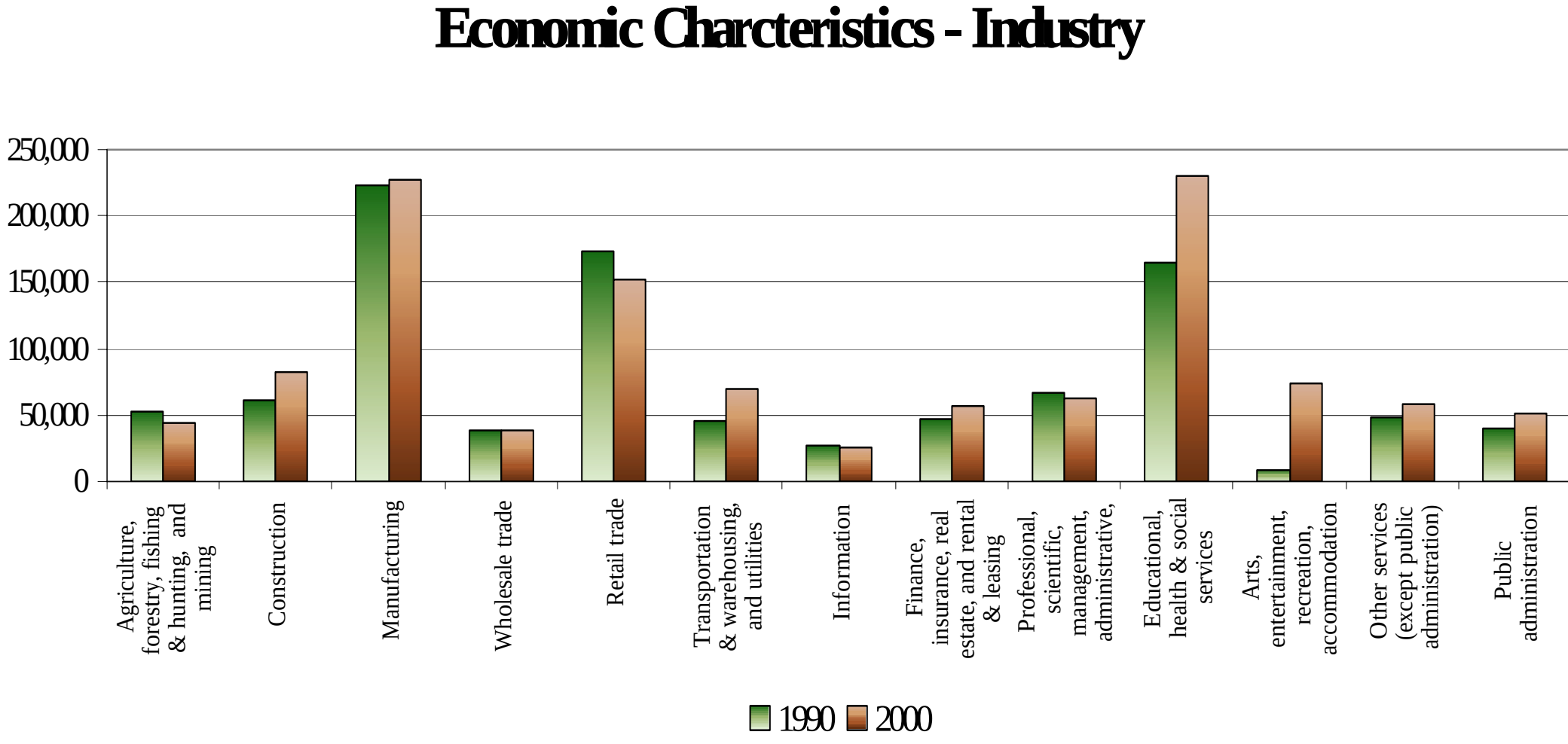
Arkansas Economic Characteristics - Income

Income	1990	2000
Per Capita Income	$10,520	$16,904
Median Household Income	$21,147	$32,182

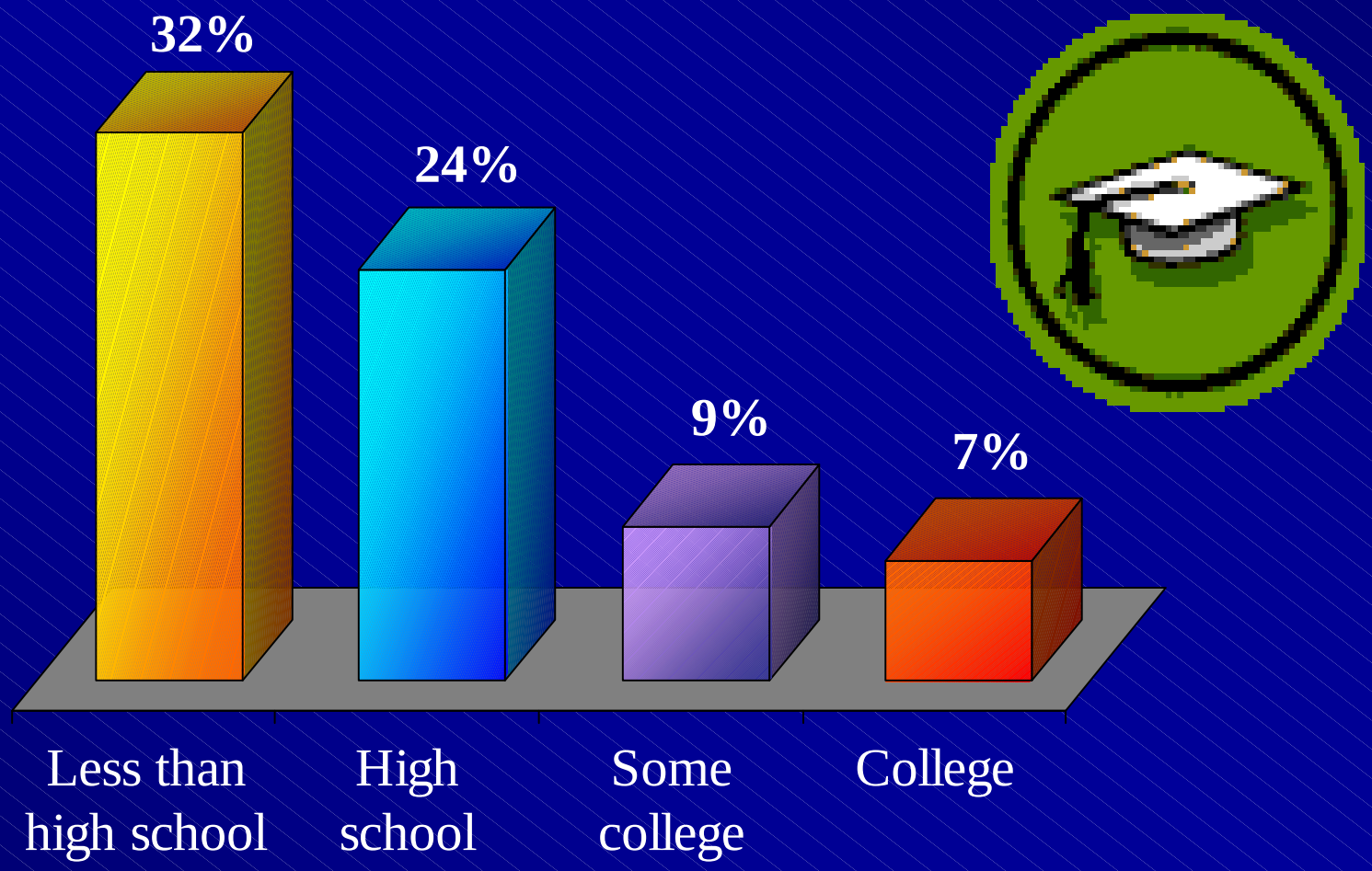
Arkansas Economic Characteristics - Occupation



Arkansas Economic Characteristics - Industry



Enrollment & Educational Attainment



The percentage of children not enrolled in school decreases as the educational attainment of the parent rises.

Arkansas Enrollment & Educational Attainment

Persons 25 yrs & over	1990	2000
Less than 9th Grade	227,633	162,464
9th to 12th Grade, no diploma	275,848	264,985
High School Graduate	489,570	590,416
Some College, no degree	249,100	355,329
Associate Degree	54,695	69,578
Bachelor Degree	132,712	190,427
Graduate or Professional Degree	66,692	98,001

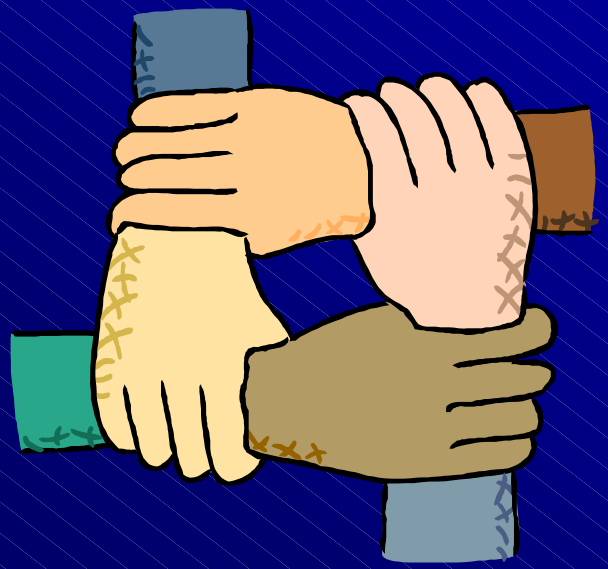
Source: U.S. Census Bureau, Census 1990 & 2000

DIVERSITY

Nationally By the year 2020:

Half the workforce will be female,

14 percent will be Hispanic,



12 percent will be African-American,

6 percent will be Asian.

Source: Hudson Institute, Arnold Packer, Sr. Fellow at Institute for Policy Studies at Johns Hopkins

TRENDS IN TECHNOLOGY

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Technology Trends

Integrating Technology and Education

THOUGHTS ON INNOVATION

Along comes the computer……..

"I think there is a world market for maybe five computers."

--Thomas Watson, Chairman of IBM, 1943

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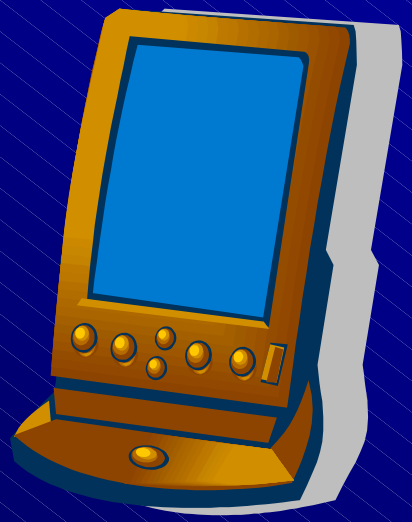
THOUGHTS ON INNOVATION

"Computers in the future may weigh no more than 1.5 tons."

--Popular Mechanics, forecasting the relentless march of science, 1949



Palm Pilot weighs about 1/2 lb

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Computers are Smaller and More Powerful

Year	*Type*	*Hard Drive*	*Extra Drives*	*Cost*
1978		16K	Floppy	$10,000
1982	8086	20MB	Floppy	$2,000
1985	286	40MB	Floppy	$2,000
1988	386	80MB	Floppy 3.5”	$2,000
1991	486	120MB	3.5” CD-ROM	$2,000
1995	Pentium 586	850MB	3.5” CD-ROM	$2,000
1997	Pentium MMX	6GB	3.5” DVD-ROM	$2,000
1999	Pen II 450 MHz	12GB	3.5” DVD-ROM	$1,600
2000	Pen III 550	20 GB	3.5” DVD-ROM	$1,200

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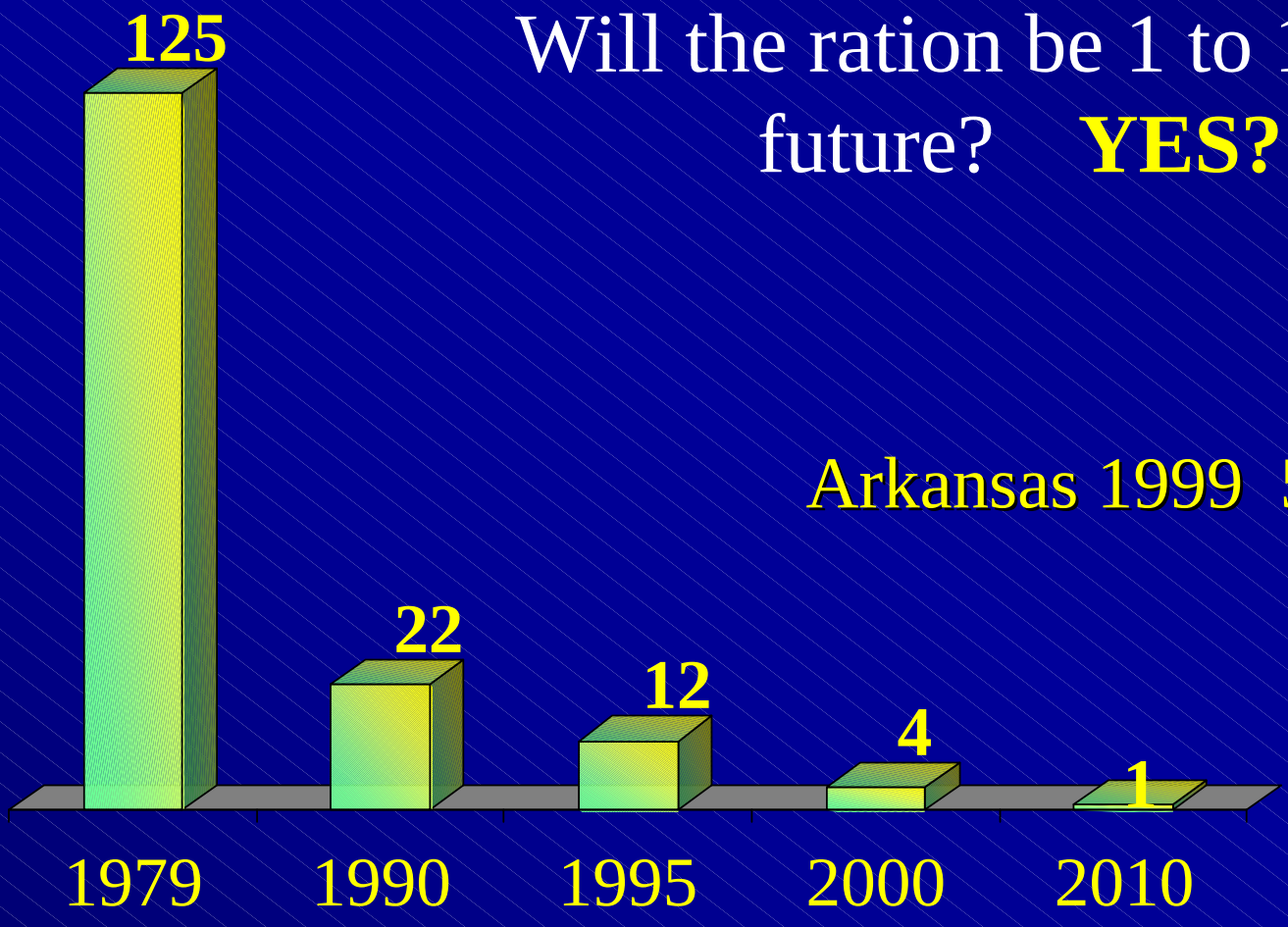
RATIO OF STUDENT TO COMPUTERS



Will the ration be 1 to 1 in the future? **YES?**

Arkansas 1999 5.6 to 1

Source: PC Magazine

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Technology and the Workforce

WORKFORCE

And beyond

Studies project that **60% to 80%** of all **jobs** will require technical skills with in the next few years.

Source: http://www.nea.org/lac/papers/tech.html

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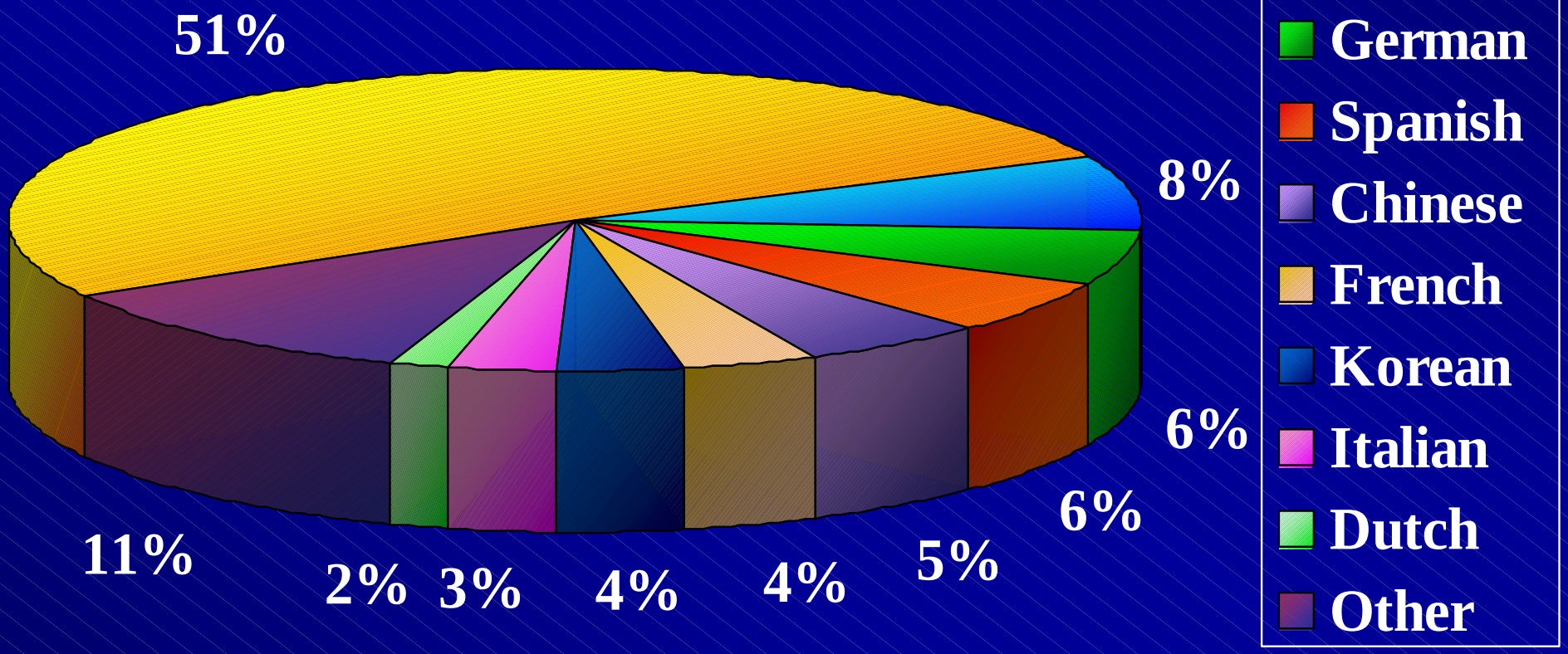
WORLD TECHNOLOGY

Online Language Populations June 2000



Source: NUA Internet Strategy, Research and Development Co., http://www.nua.ie/

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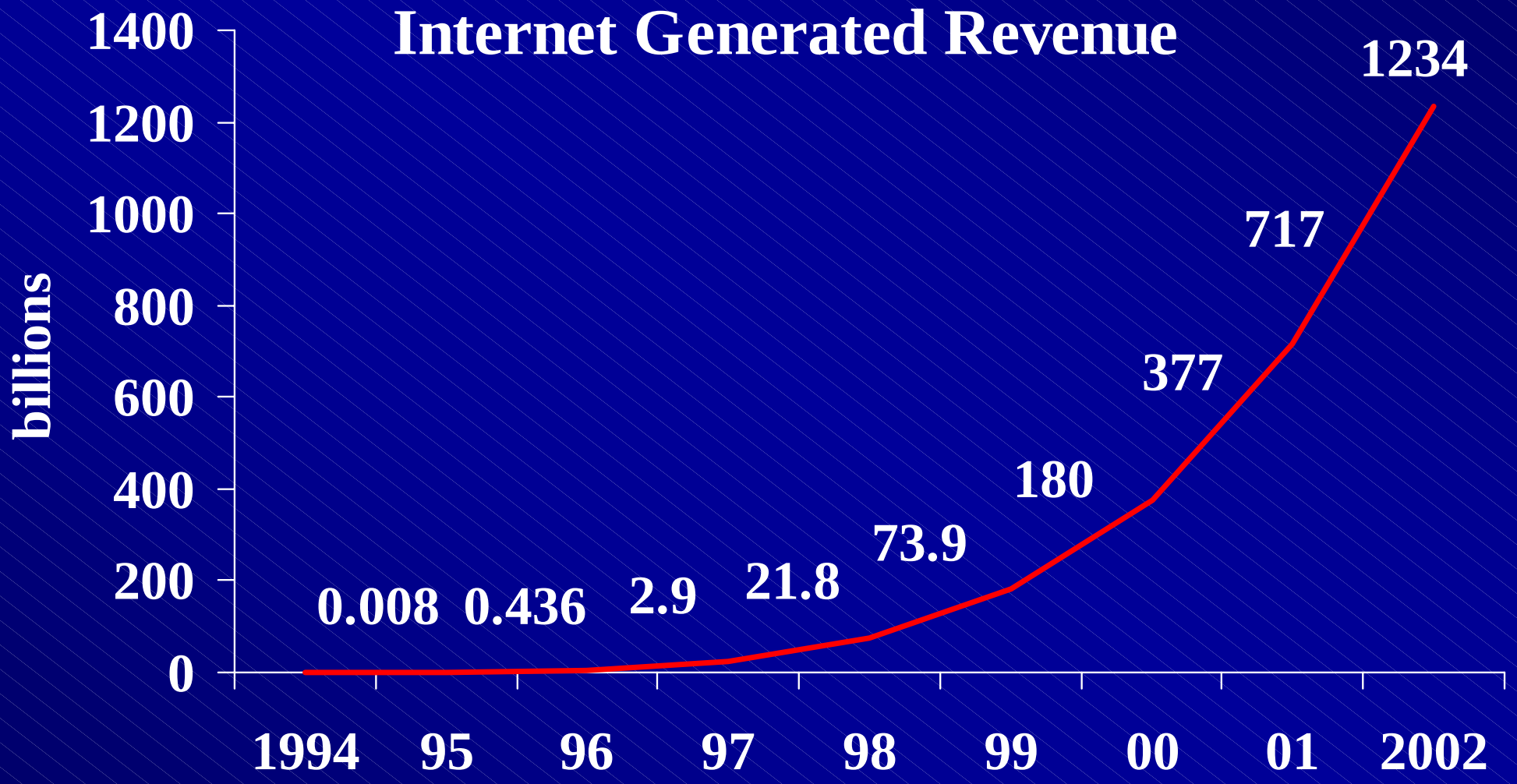
INTERNET GROWTH



Source: http://www.nua.ie/surveys/analysis/graphs_charts/comparisons/total_revenue_generated_2002.html

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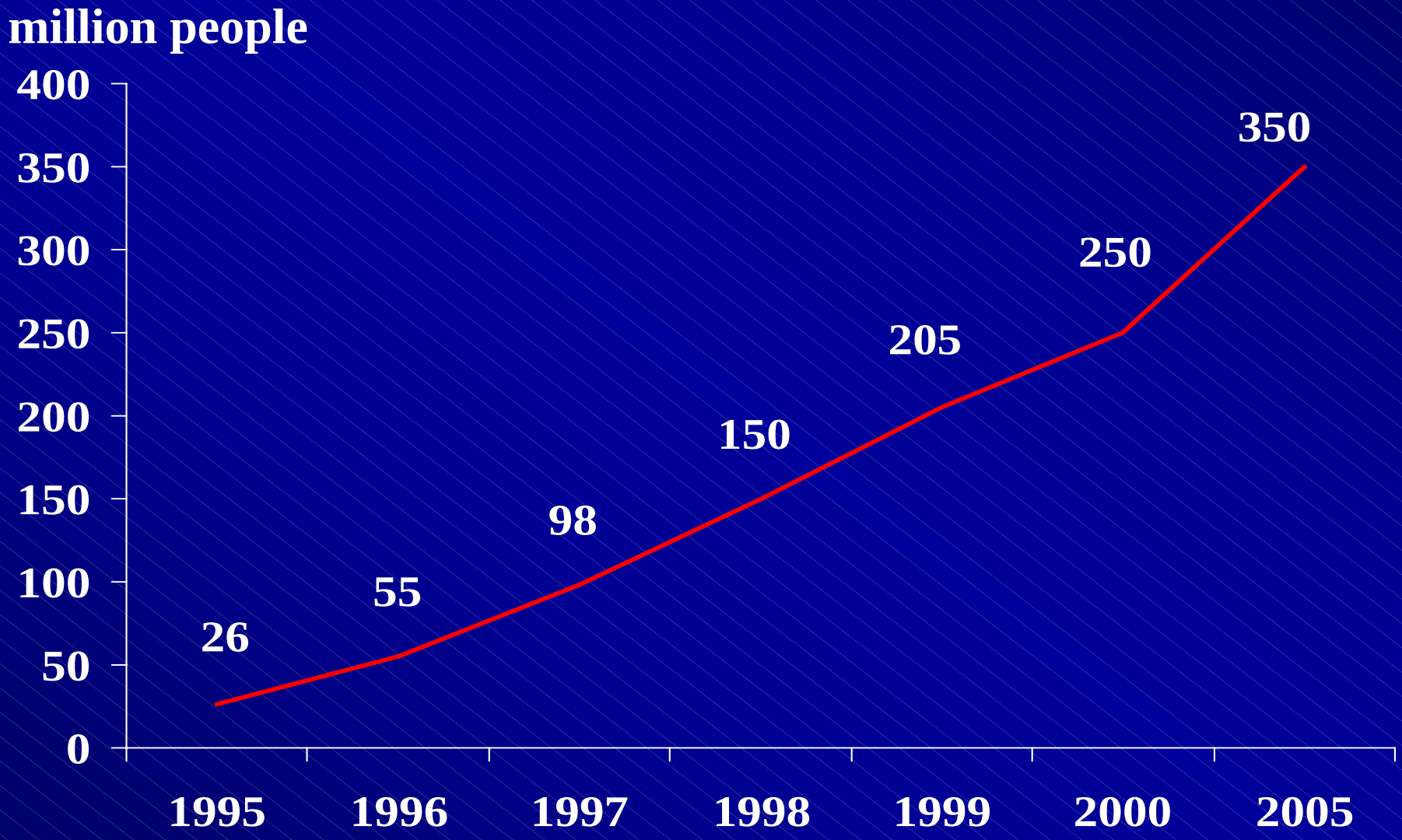
INTERNET GROWTH



Source: http://www.nua.ie/surveys/analysis/graphs_charts/comparisons/how_many_online.html

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FUTURE

"Throughout history, every significant increase in human productivity has involved better use of better tools."

-R. Bennet, Chair, Utah Strategic Planning Commission

Source:USA Today, Snaphshots

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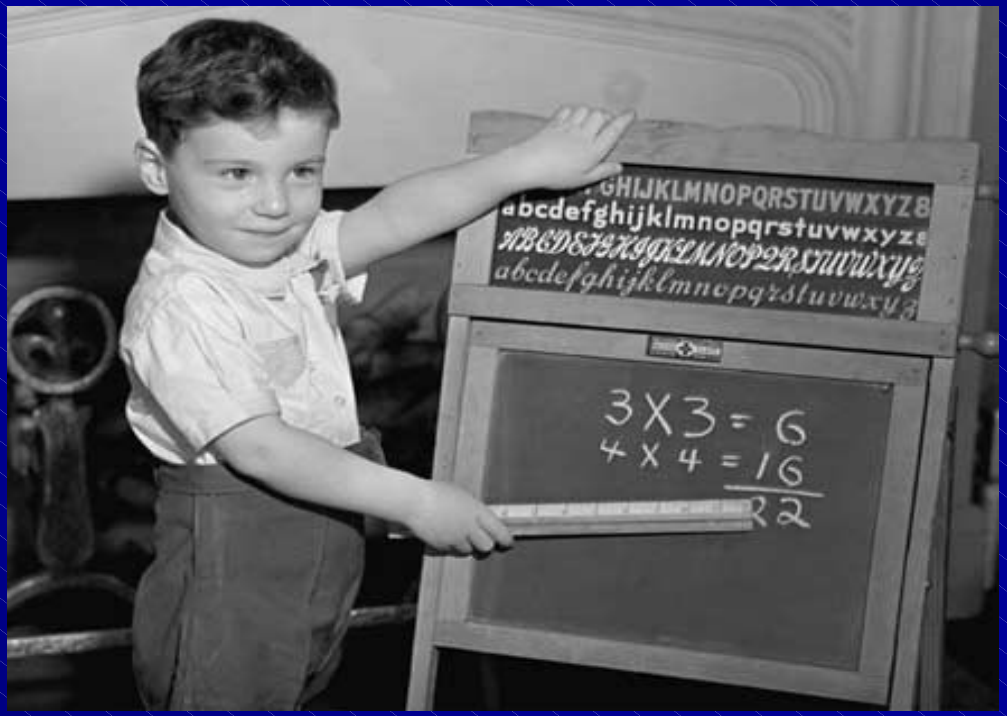
Educational Trends

History

Teachers taught reading, writing, and elementary mathematics to complement the skills students learned outside of school.



The need for higher levels of education was minimal since few students pursued more than a basic education.

Source:http://www.nap.edu/readingroom/books/techgap/navigate.dgi

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History

With the Industrial Revolution came a revolution in schooling. Students learned enough to obtain a factory job.

They attended large schools where they sat in neat rows and listened to the teacher in the front of the classroom.

Source:http://www.nap.edu/readingroom/books/techgap/navigate.dgi

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CURRICULUM

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SCHOOL SIZE

Trends

- Small to Large Schools
- How Small is Small
- Schools-within-Schools
  - Groupings of 100-200
  - Academies
  - Thematic Schools

Knowledgeworks/ Gates Foundations

- **High School <600**

Movement Away from

Factory-Departmental-Mass Production Model

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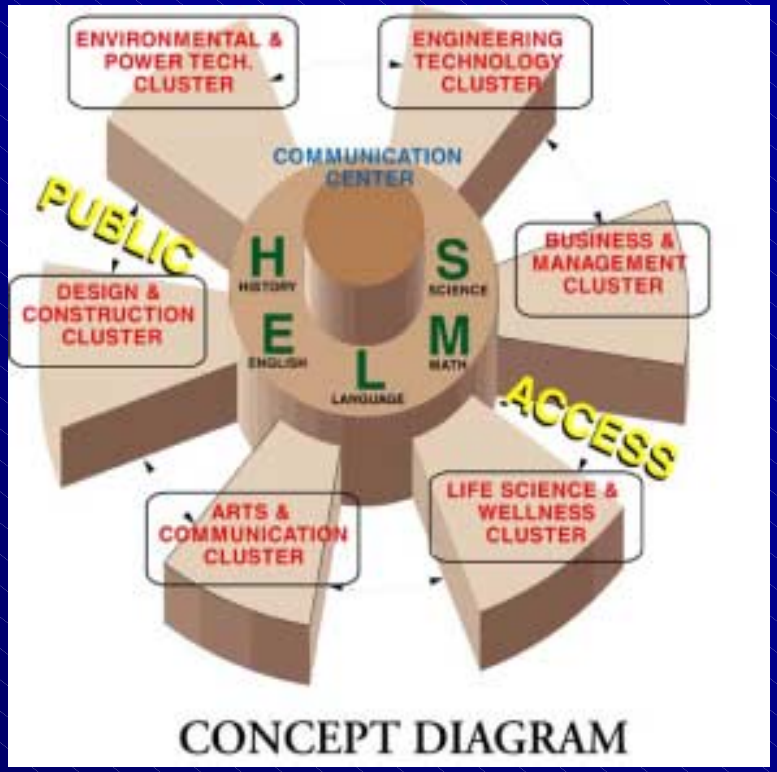
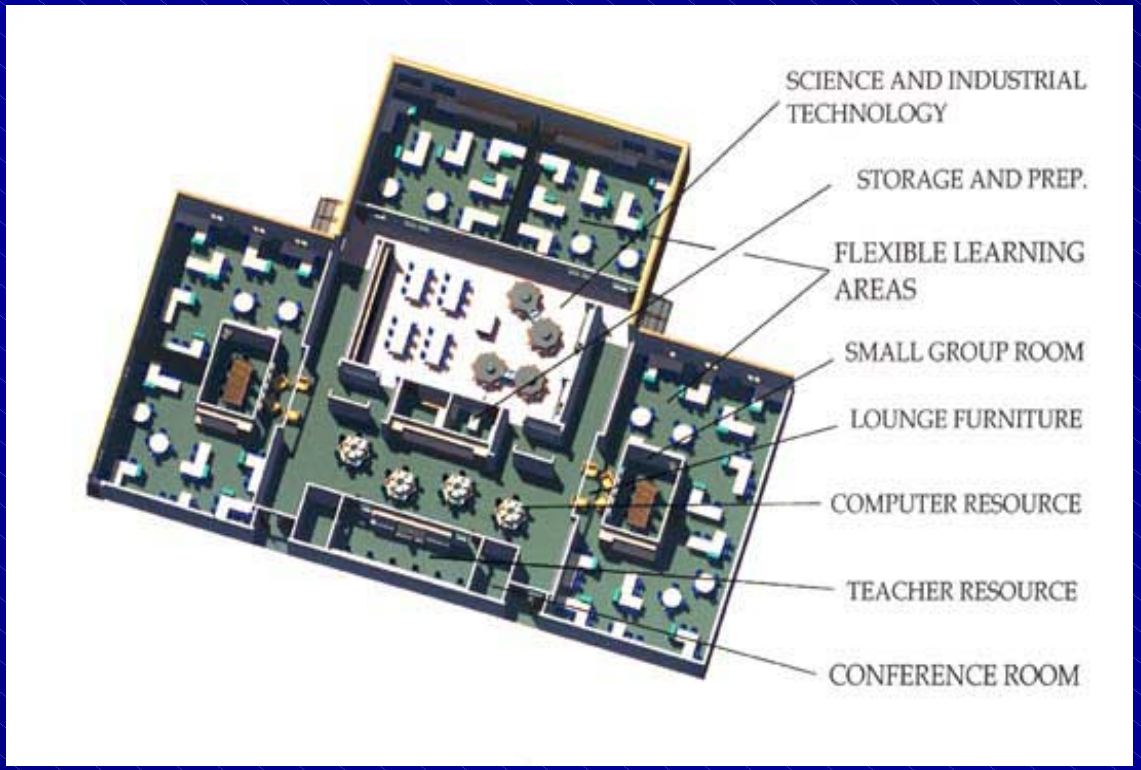
SCHOOL SIZE

- Schools Within Schools



CONCEPT DIAGRAM



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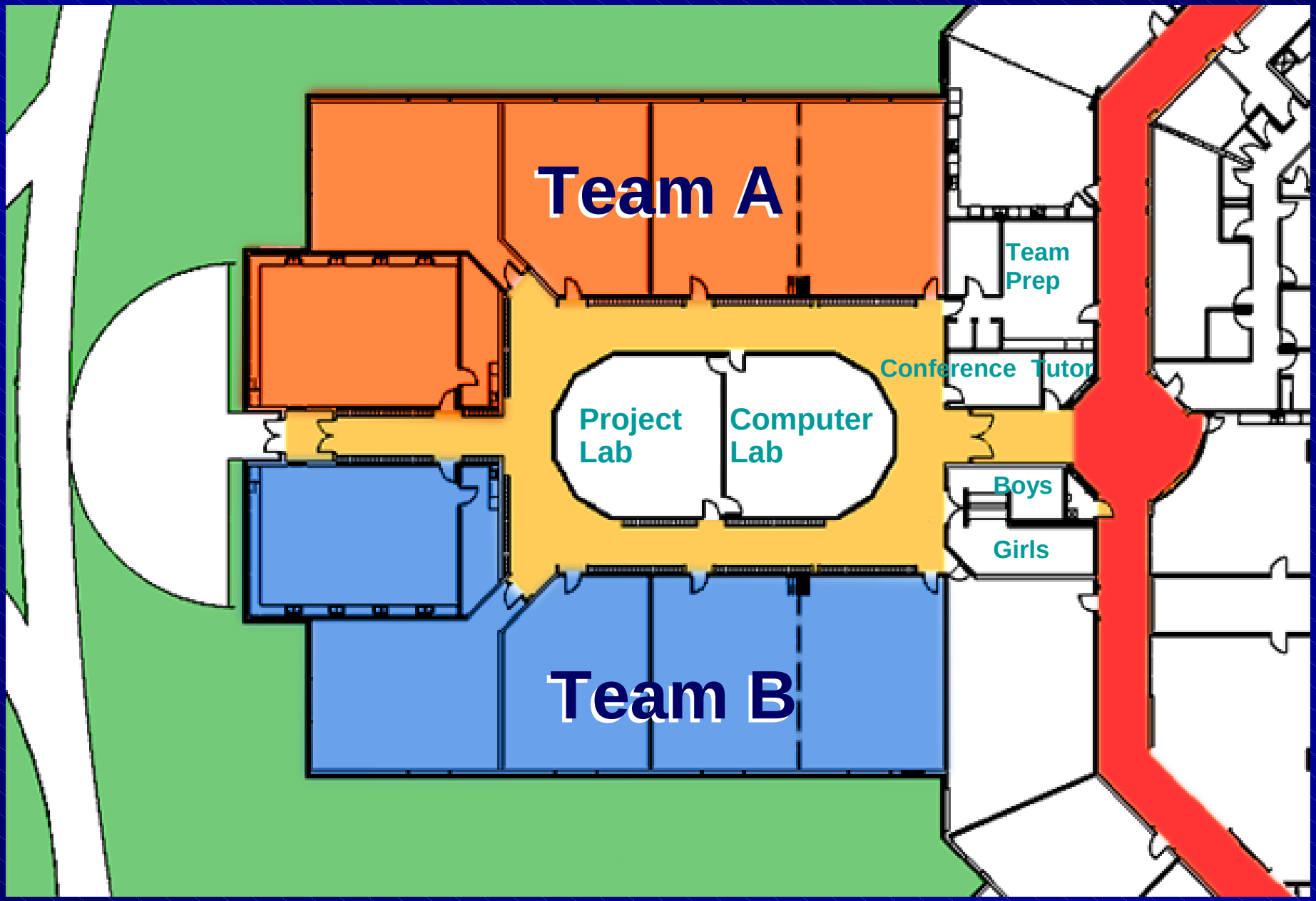
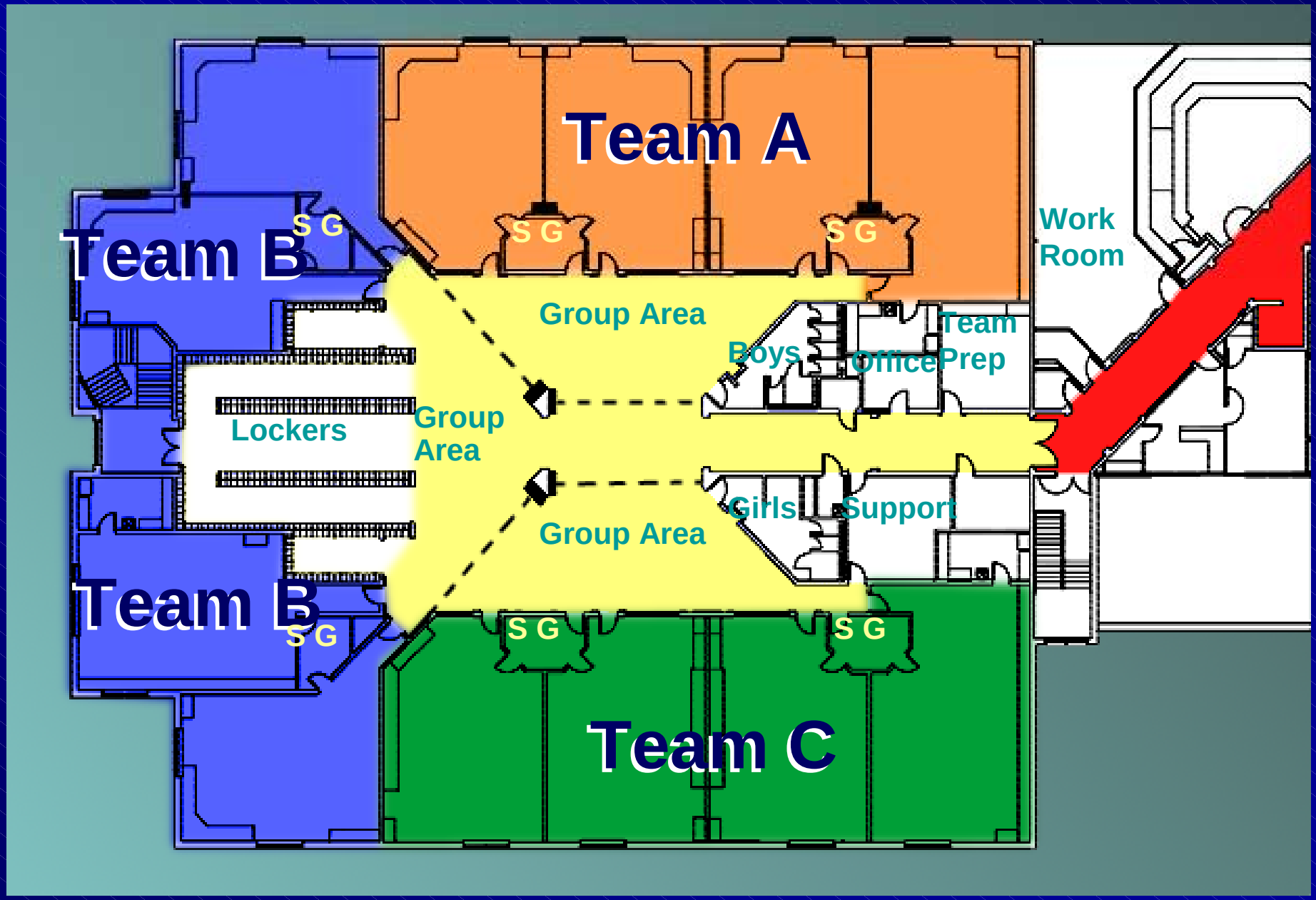
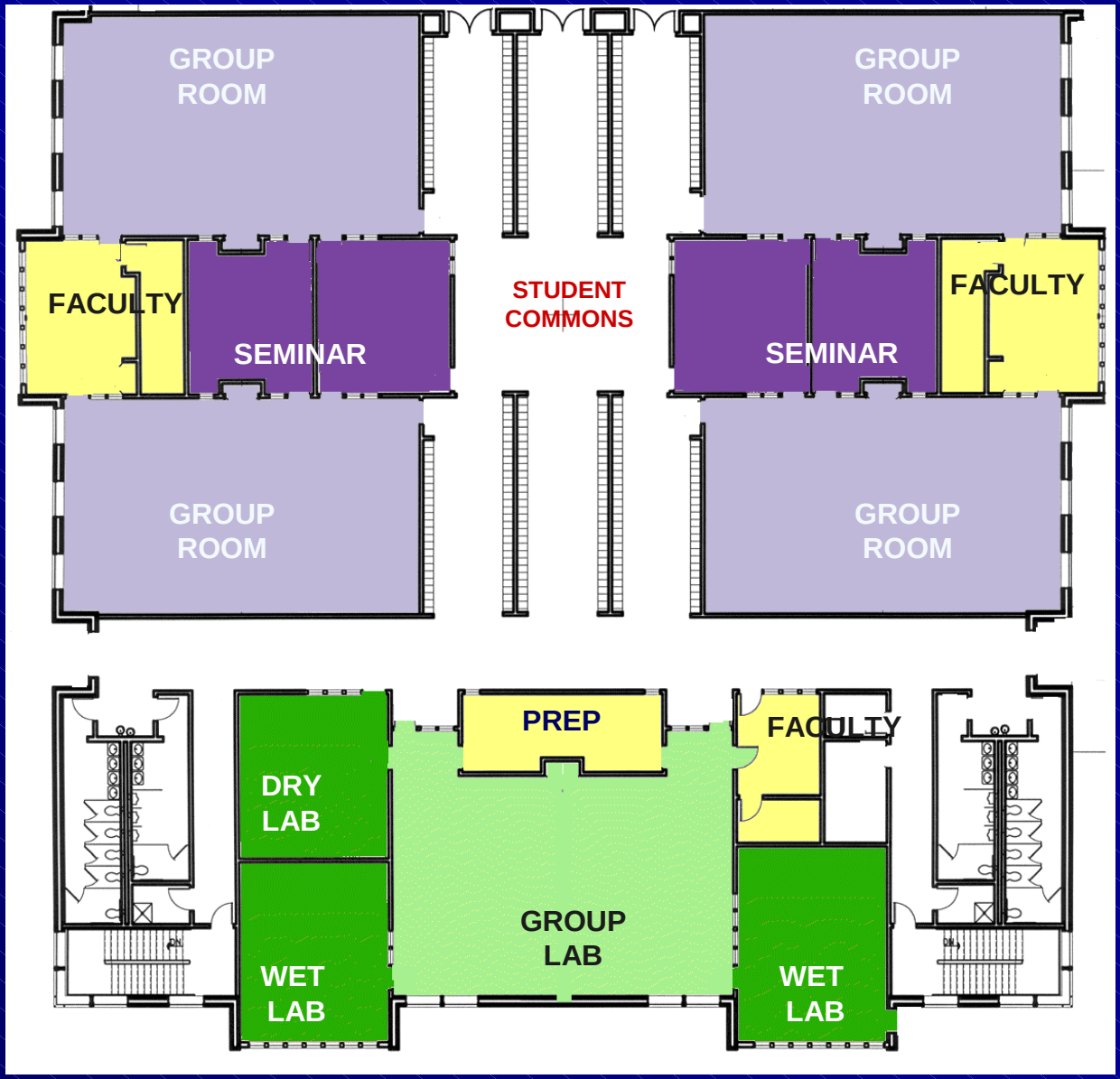
GROUPING OF 75-125 STUDENTS



GROUPING OF 75-125 STUDENTS

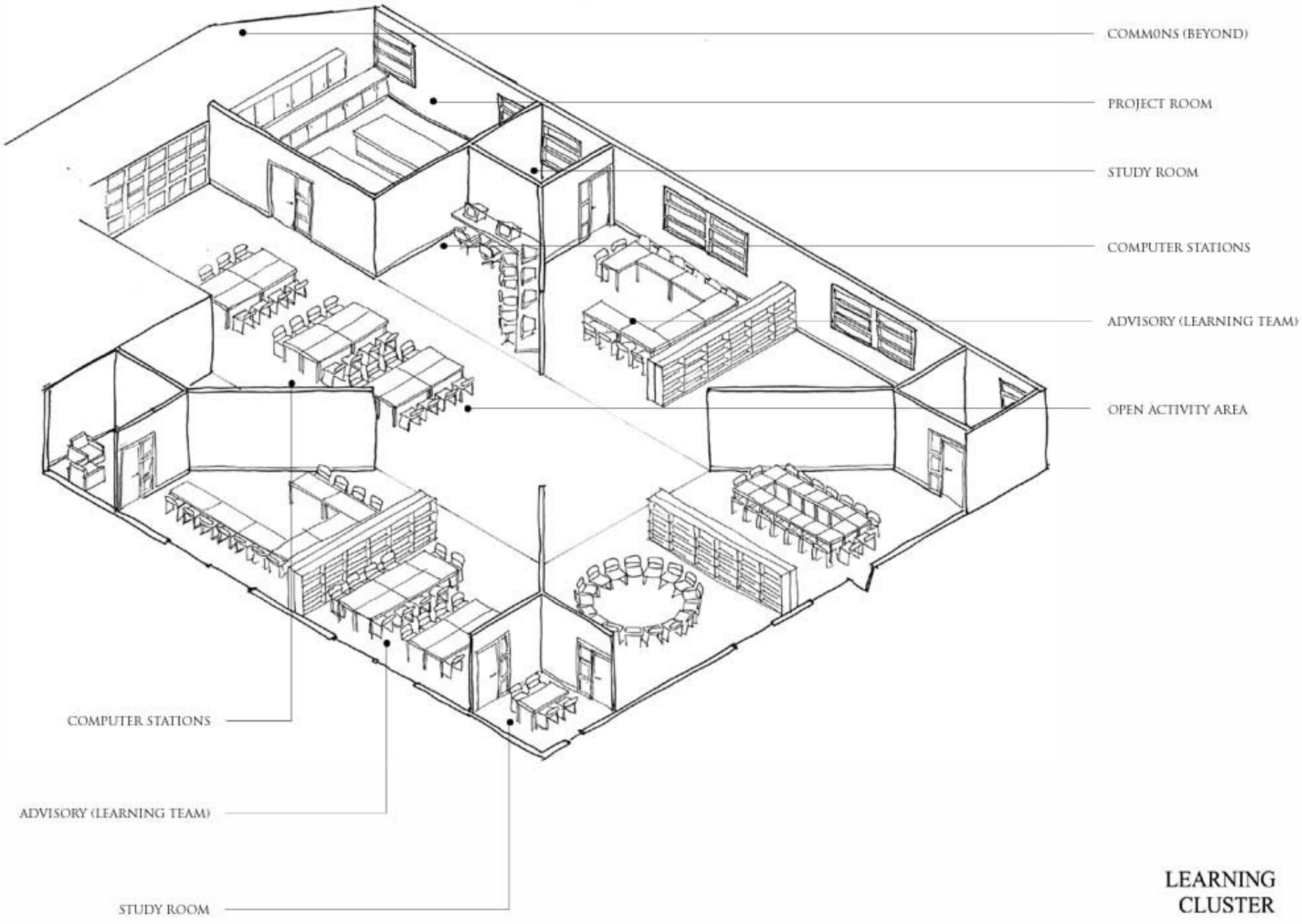


GROUPING OF 75-125 STUDENTS



Academic Cluster

GROUPING OF 75-125 STUDENTS



SCHOOLS-WITHIN-SCHOOLS

Feeling of Neighborhood and Community

CURRICULUM

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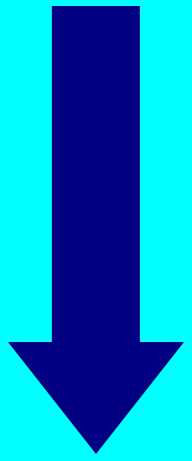
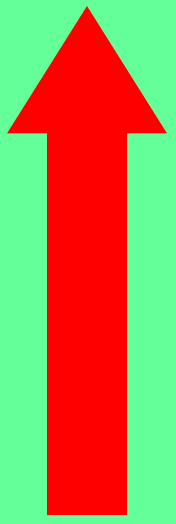
CLASSROOM SIZE

Class Size



Classroom Size



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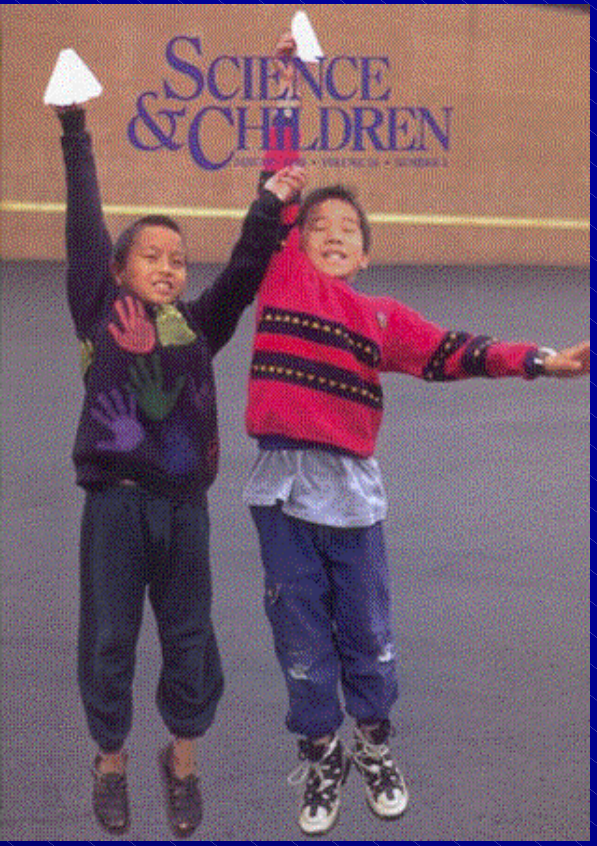
Education CHANGE IN PEDEGOGY



1) Lecture/Presentation

2) Research

3) Hands-On Activities

4) Analysis

5) Simulation

6) Production

7) Assessment

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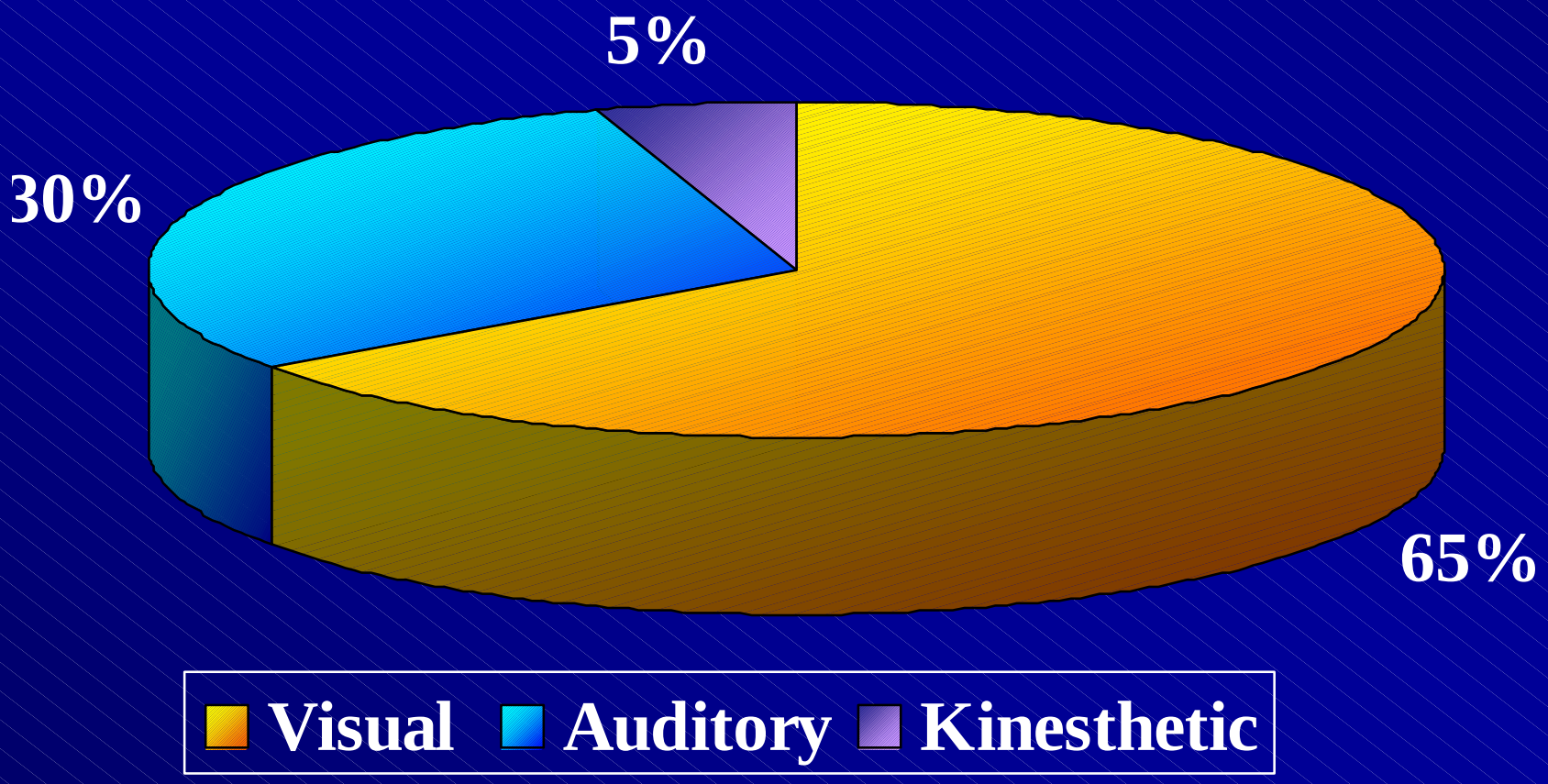
Learning Styles

What learning Style do most Children have?



Source: http://www.mindtools.com/mnemlsty.html

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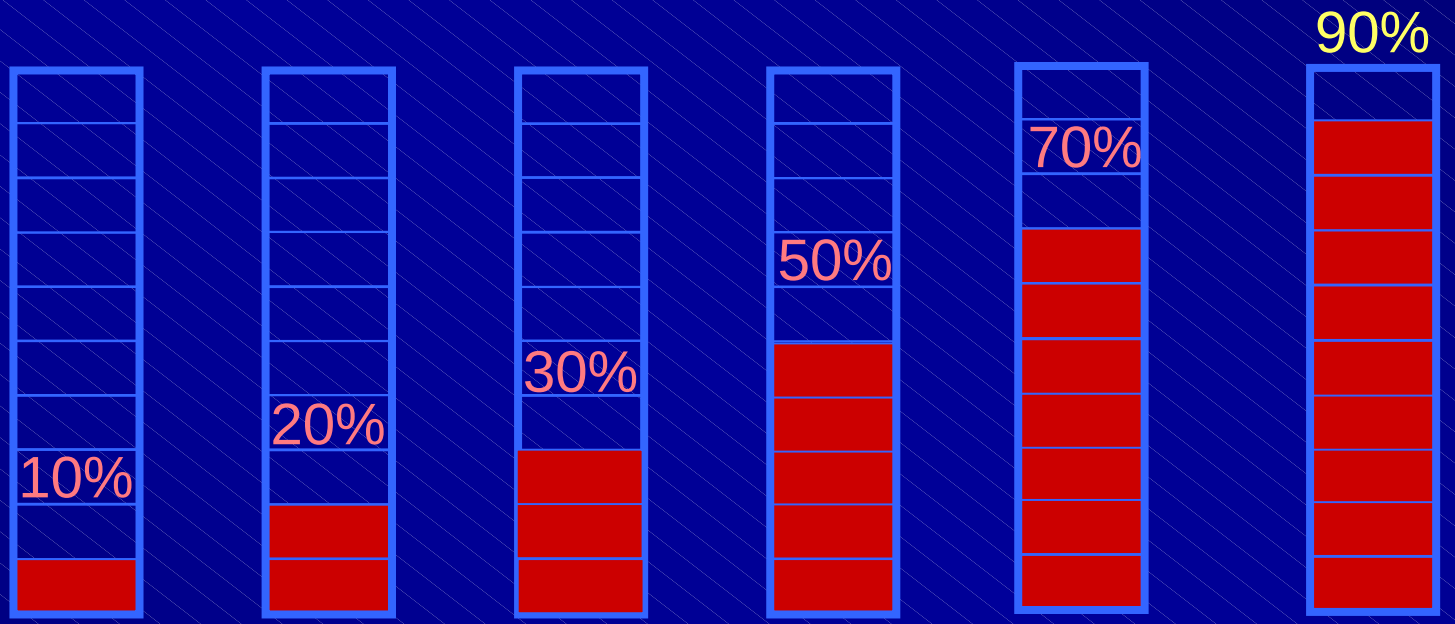
Education New Strategies

Studies support the idea that learning is facilitated through hands-on and experiential projects. On average, students retain ...



... of what they:

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CLASSROOM SIZE

Instructional Strategies

- Small Group Instruction
- Group Work
- Individualize Instruction
- Large Group Instruction

Furniture & Equipment

- Tables & Chairs
- Integration of Technology
- More Equipment
- Creation of Learning Centers within Classroom

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GROUP WORK

COMPUTER LABS

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FURNITURE

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FURNITURE

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CONNECTABLILITY

Integrated Throughout the Building
Wire or Wireless?

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TECHNOLOGY

- Smaller/Thinner/Lighter
- Each Student-Personal Computing Devise
- Wireless
- All Spaces Computer Ready
- Devise: Computer, TV, Phone/Web Browser

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CURRICULUM

Program Delivery

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PROGRAM DELIVERY

Old

- Self-Contained
- Departmental

New

- **Departmental**
- **School-Within-a-School**
  - **Academies**
  - **Magnet Schools**
  - **9th Grade Centers**
  - **Grade Level Teams**
  - **Thematic Instruction**

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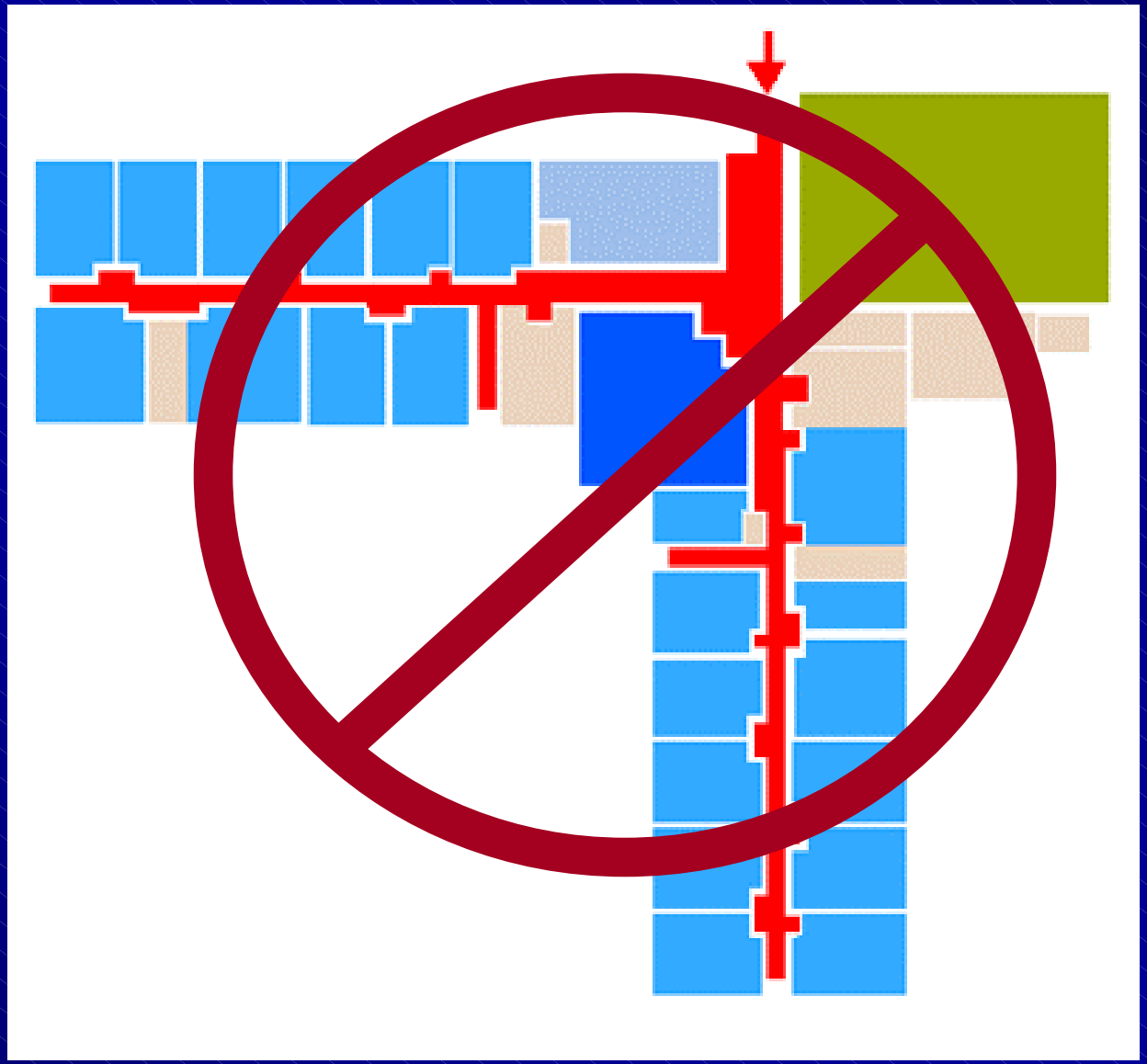
DOUBLE LOADED CORRIDORS

Plan Key

- Admin. / Office
- Art
- Classroom
- Commons/Cafeteria
- Corridor
- Elevat', Stair, Ramp
- Entry
- Health, Counseling
- Lg. Group Instruct'n
- Library, Media Cntr.
- Music, Theater
- Physical Education
- Science Lab
- Small Group Room
- Teacher Planning
- Team Resource
- Technology, Shop
- Support / Utility



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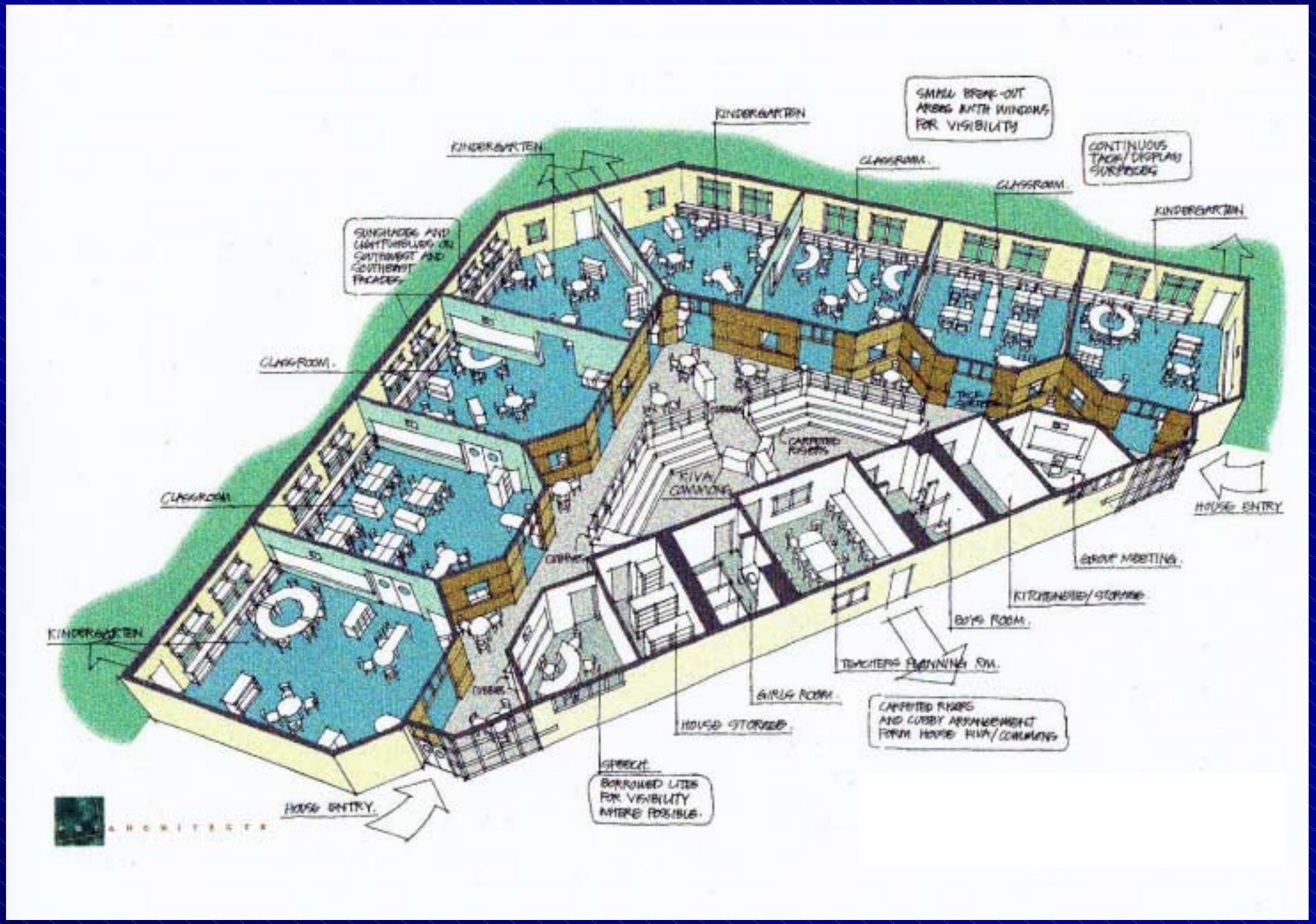
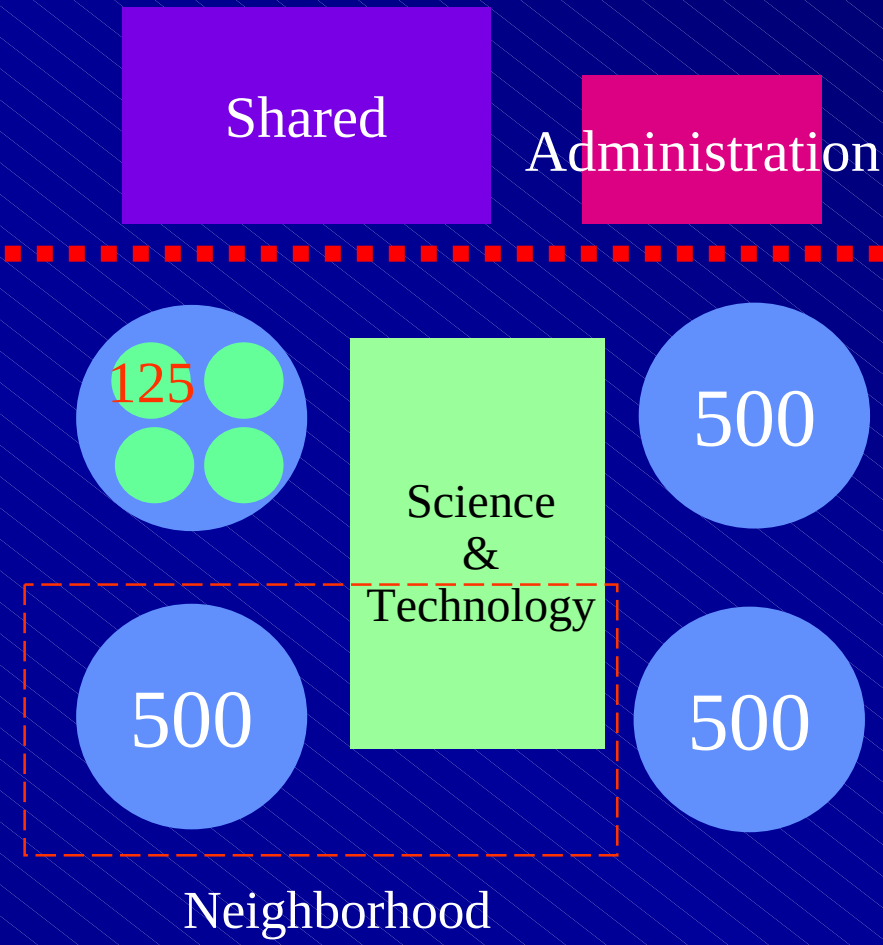
COLLABORATIVE TEACHING



Master Planning **Organizational Options**

- 2000 Student Capacity…….



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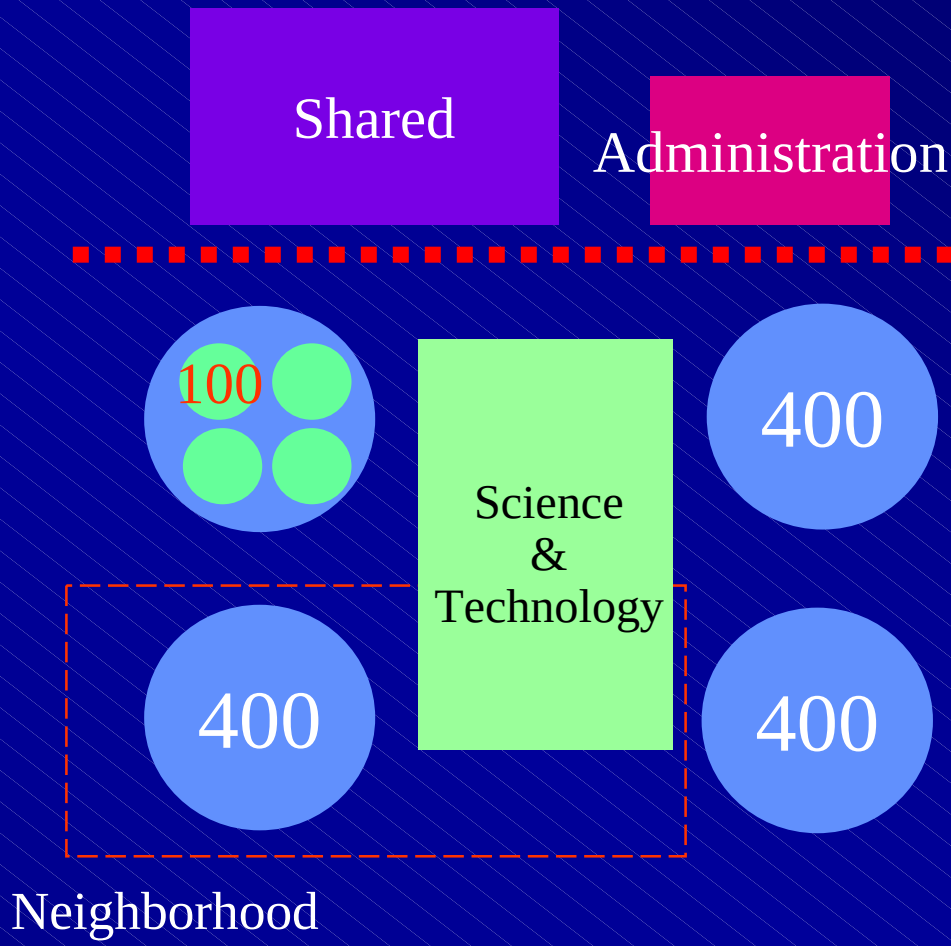
Master Planning **Organizational Options**

- 2000 Student Capacity…….
- 20 -25% are in shared facilities (400)



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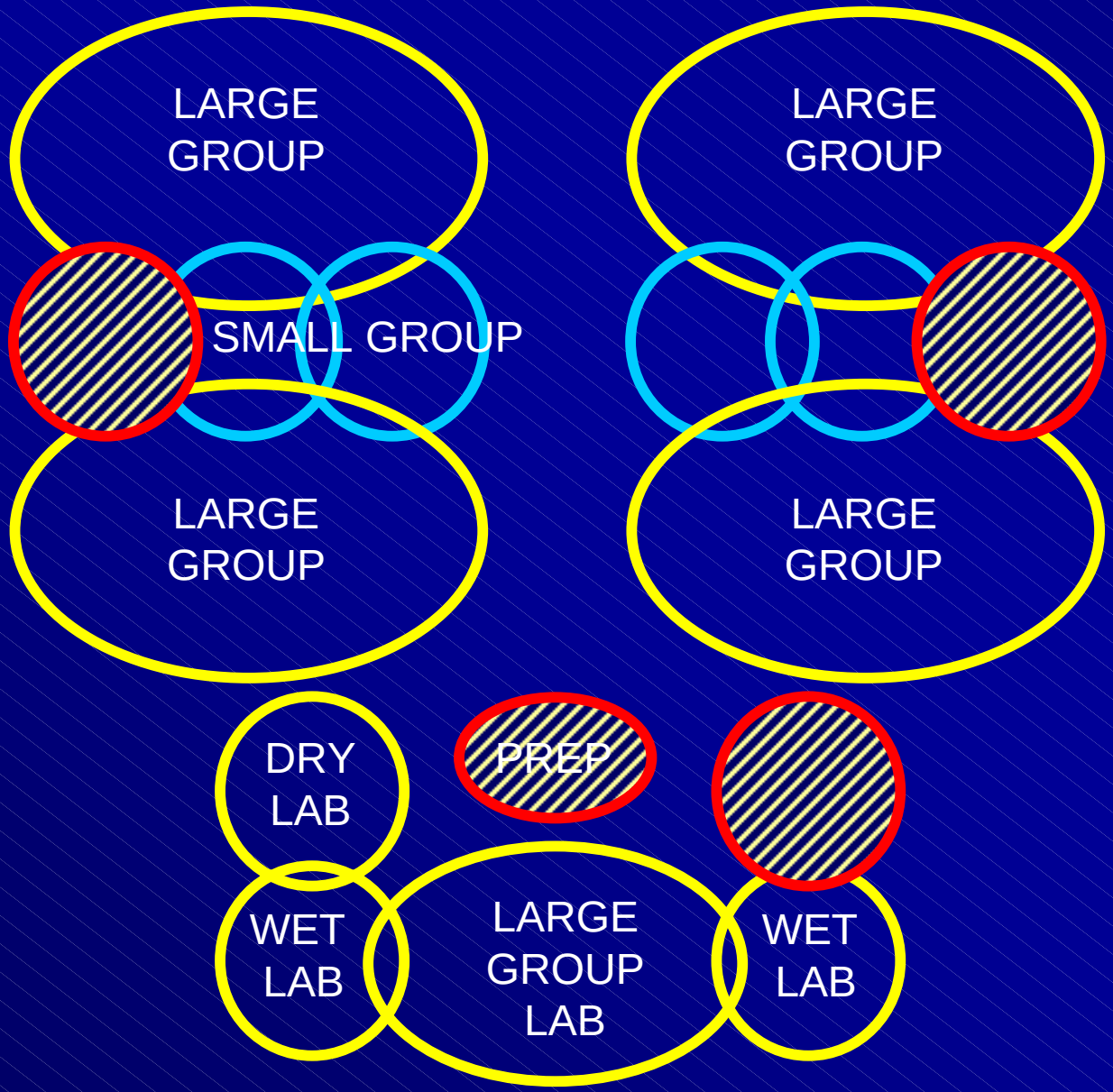
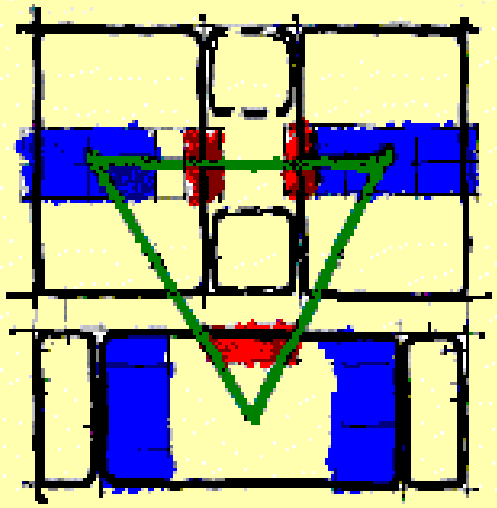
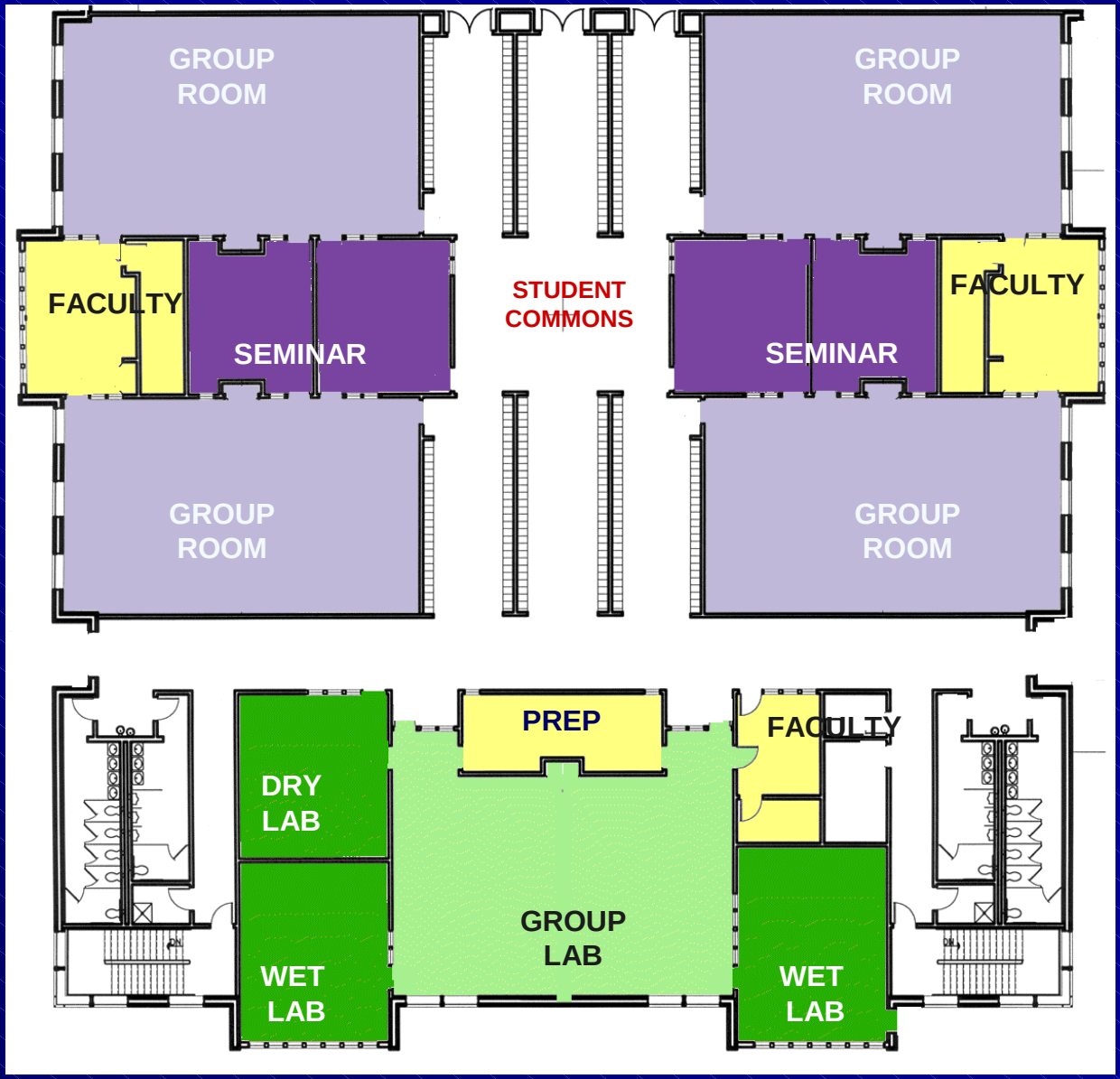
LIBERTY HIGH SCHOOL



PRELIMINARY SKETCH

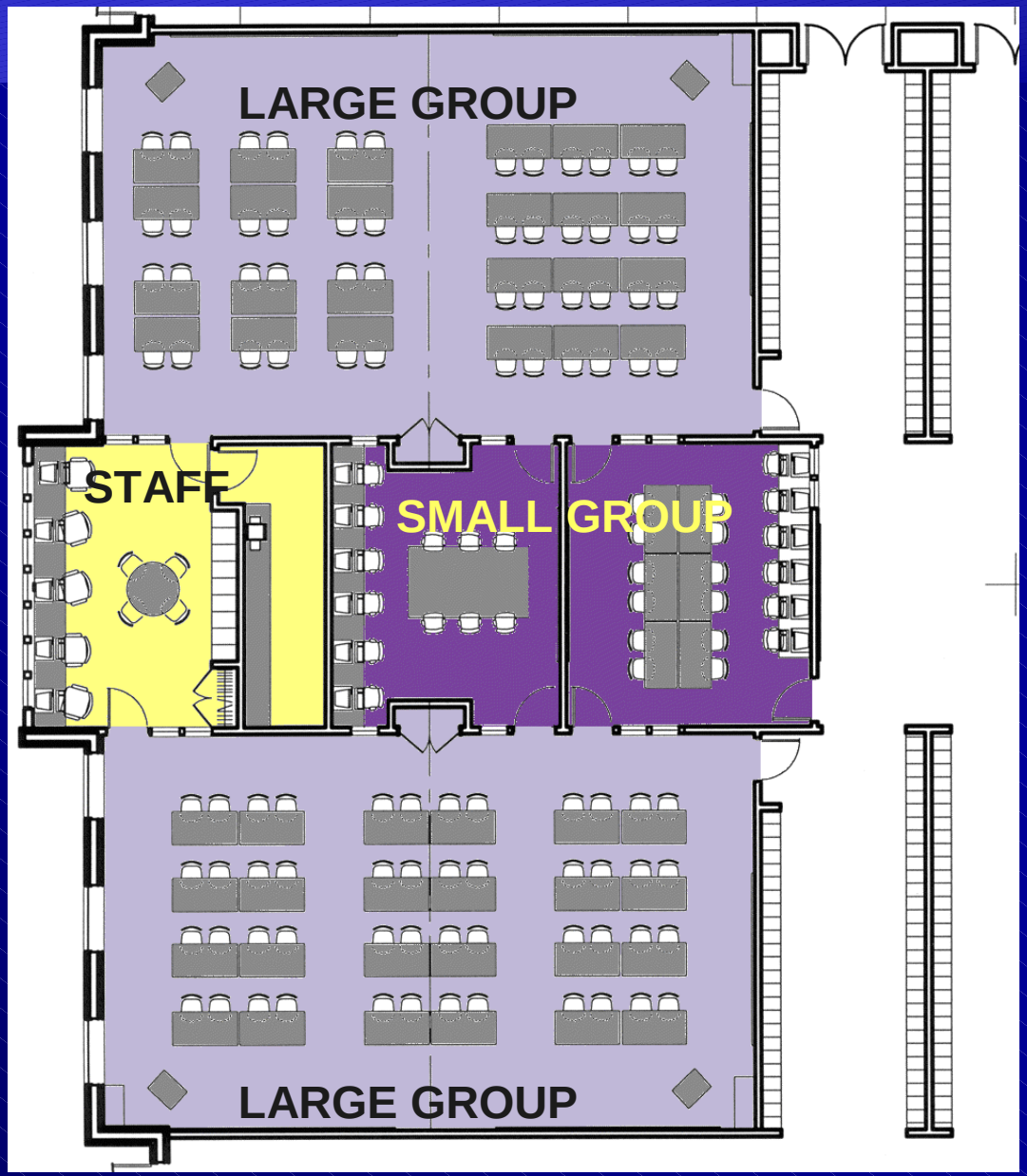


LIBERTY HIGH SCHOOL



Academic Cluster

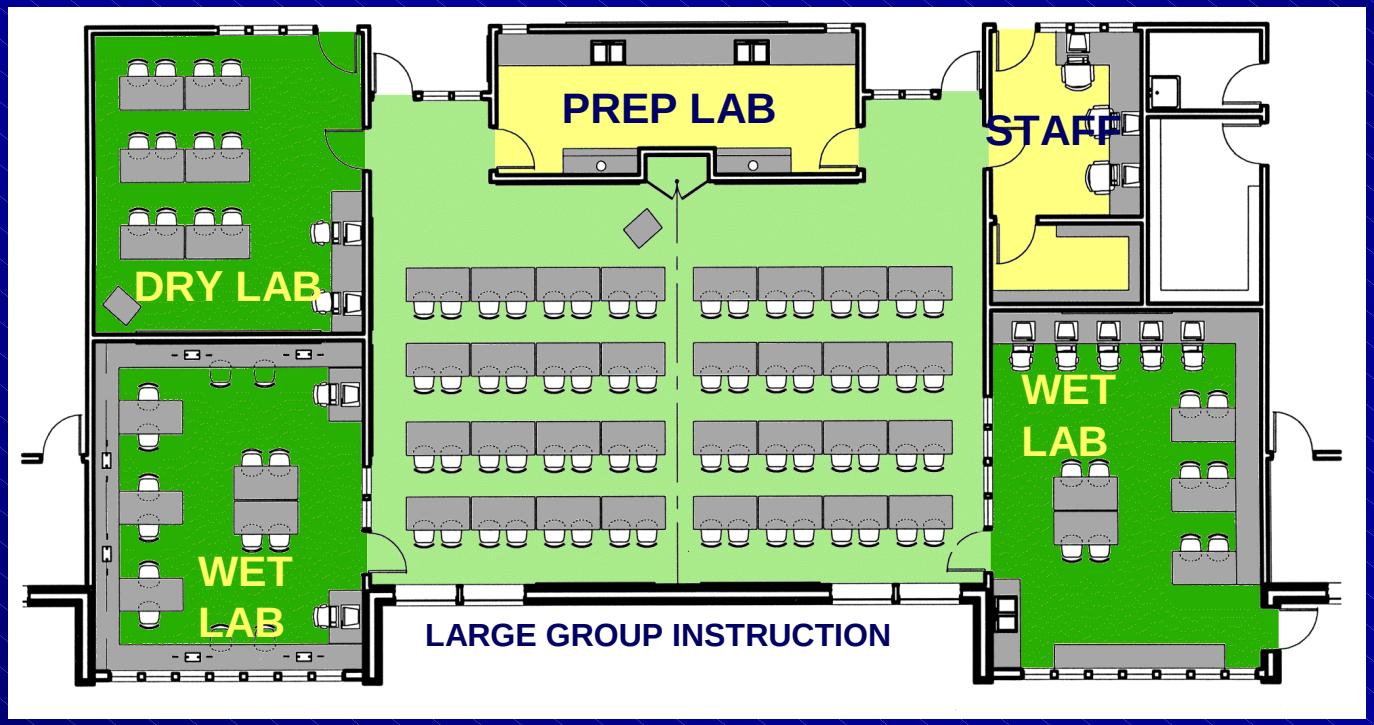
LIBERTY HIGH SCHOOL



- Larger
- Smaller
- Flexible
- Changeable
- Exciting

Developing the Master Classroom

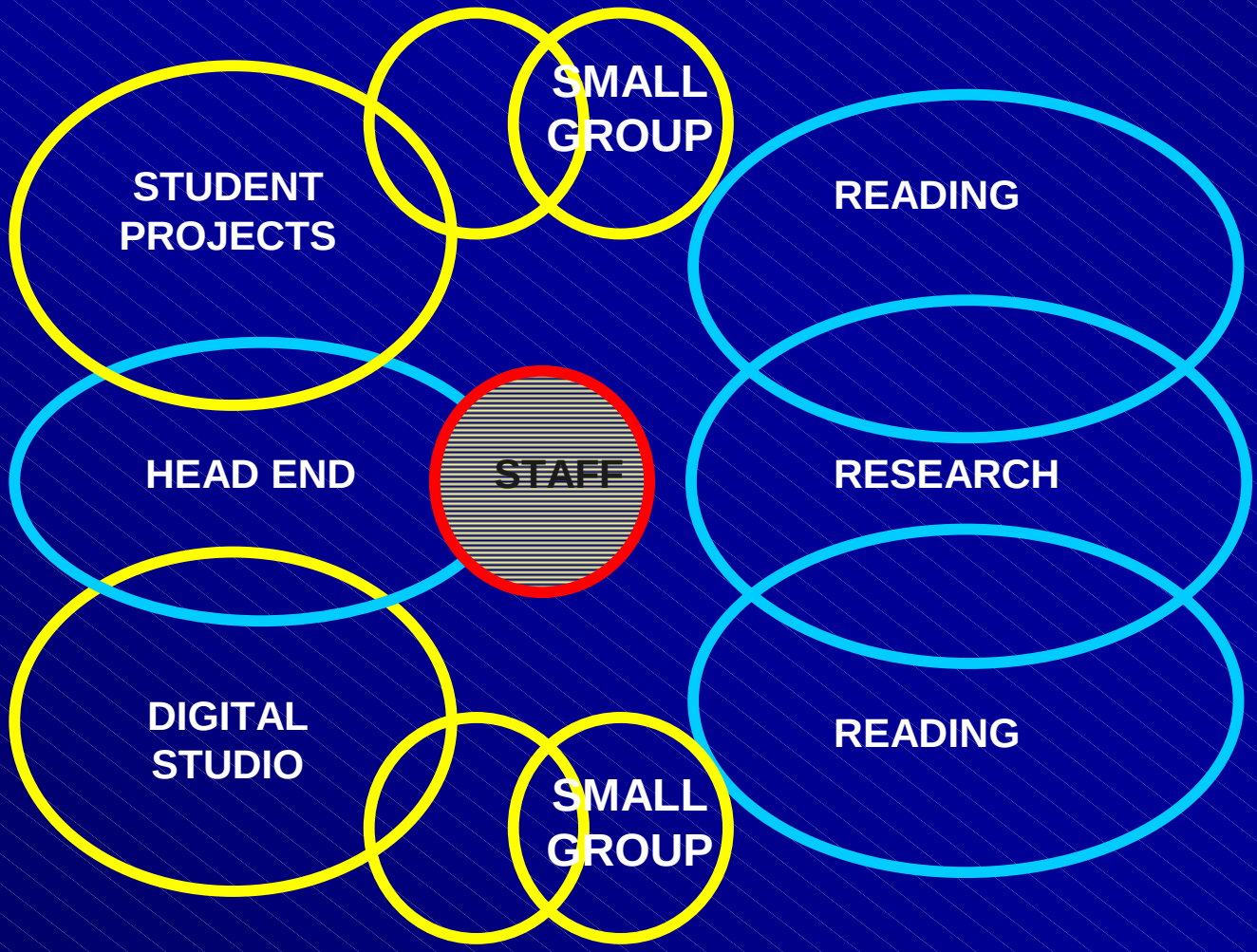
A NEW MODEL: ITM



- Flexibility of Space
- Testing, Research and Simulation oriented
- Small Group Work
- Multidisciplinary
- Project Space
- More Movable Furniture

Science Suite

FLEXIBILITY



- On Line
- Fewer, more frequently read books (How Many?)
- A Classroom atmosphere
- Information Management and Processing
- Research and Project Support Focus

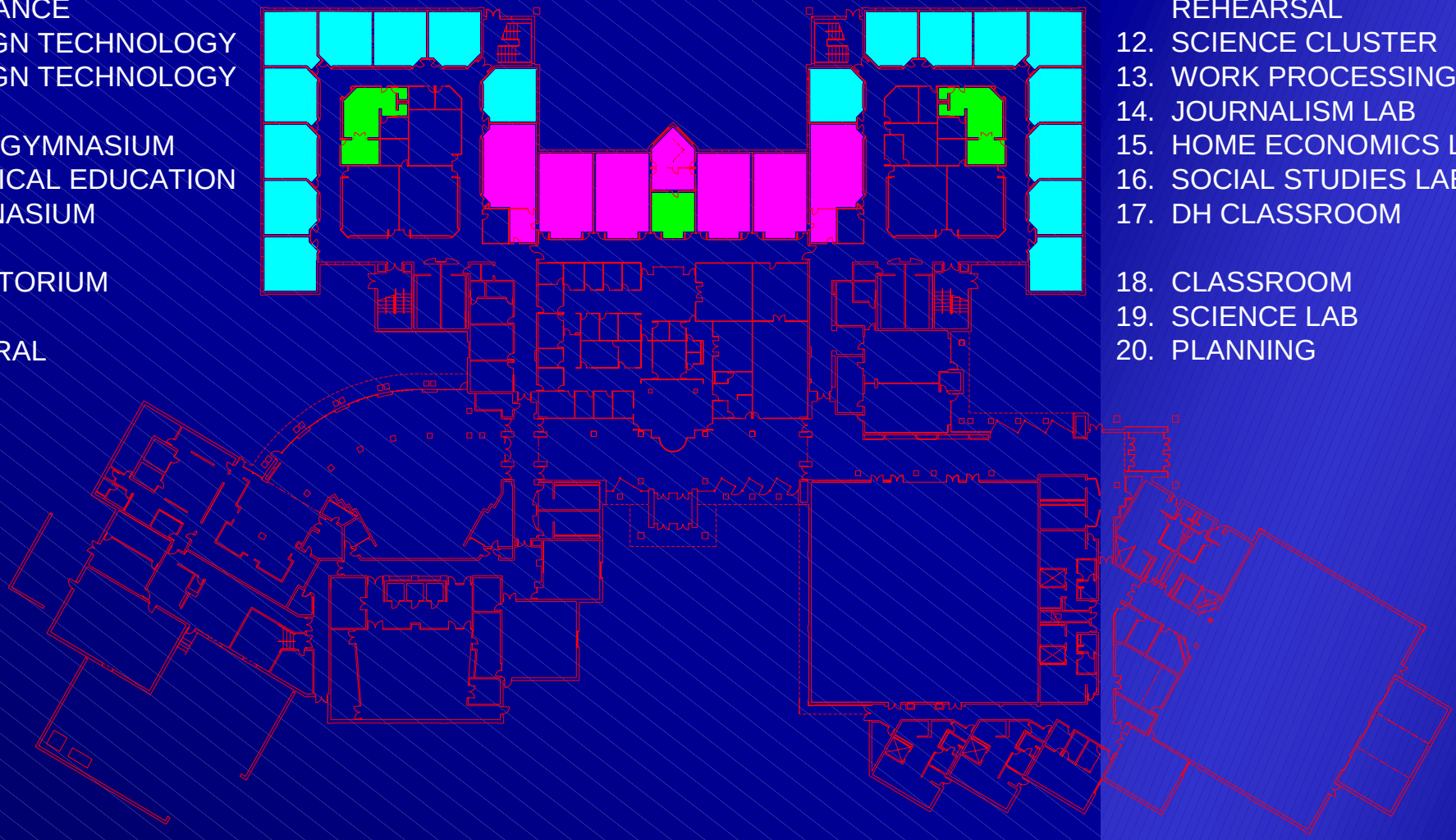
Media Center

DUBLIN SCIOTO HIGH SCHOOL

Fanning/Howey &Associates, Inc.

DUBLIN SCIOTO HIGH SCHOOL

1. ADMINISTRATION
2. GUIDANCE
3. DESIGN TECHNOLOGY
4. DESIGN TECHNOLOGY
5. ART
6. MAIN GYMNASIUM
7. PHYSICAL EDUCATION GYMNASIUM
8. CAFETORIUM
9. BAND
10. CHORAL
11. THEATER, BAND, CHORAL REHEARSAL
12. SCIENCE CLUSTER
13. WORK PROCESSING LAB
14. JOURNALISM LAB
15. HOME ECONOMICS LAB
16. SOCIAL STUDIES LAB
17. DH CLASSROOM
18. CLASSROOM
19. SCIENCE LAB
20. PLANNING



Fanning/Howey &Associates, Inc.

First Floor

DUBLIN SCIOTO HIGH SCHOOL

1. ADMINISTRATION
2. GUIDANCE
3. DESIGN TECHNOLOGY
4. DESIGN TECHNOLOGY
5. ART
6. MAIN GYMNASIUM
7. PHYSICAL EDUCATION GYMNASIUM

8. CAFETORIUM
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10. CHORAL
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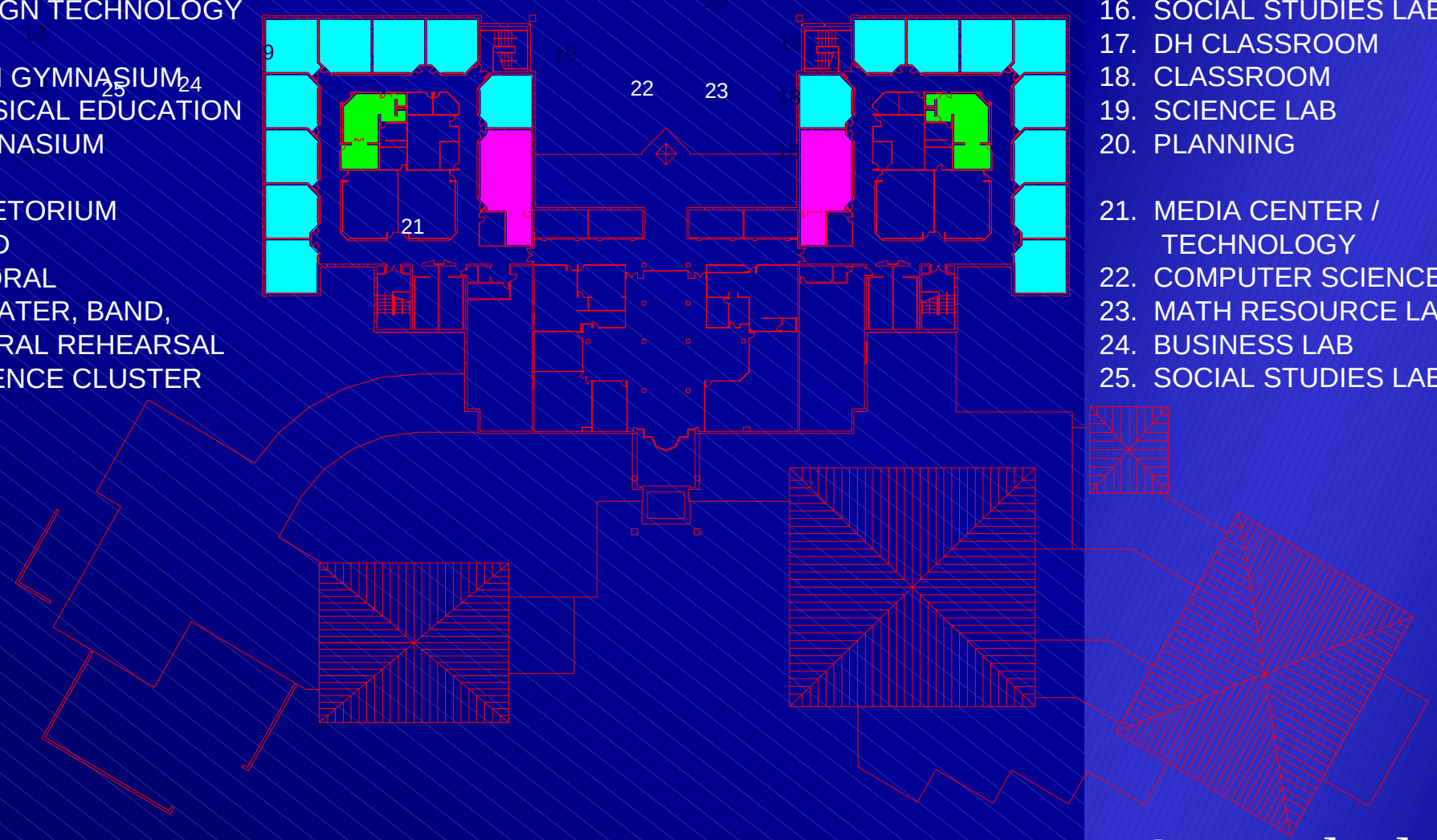
12. SCIENCE CLUSTER



13. WORD PROCESSING LAB
14. JOURNALISM LAB
15. HOME ECONOMICS LAB
16. SOCIAL STUDIES LAB
17. DH CLASSROOM
18. CLASSROOM
19. SCIENCE LAB
20. PLANNING

21. MEDIA CENTER / TECHNOLOGY
22. COMPUTER SCIENCE LAB
23. MATH RESOURCE LAB
24. BUSINESS LAB
25. SOCIAL STUDIES LAB

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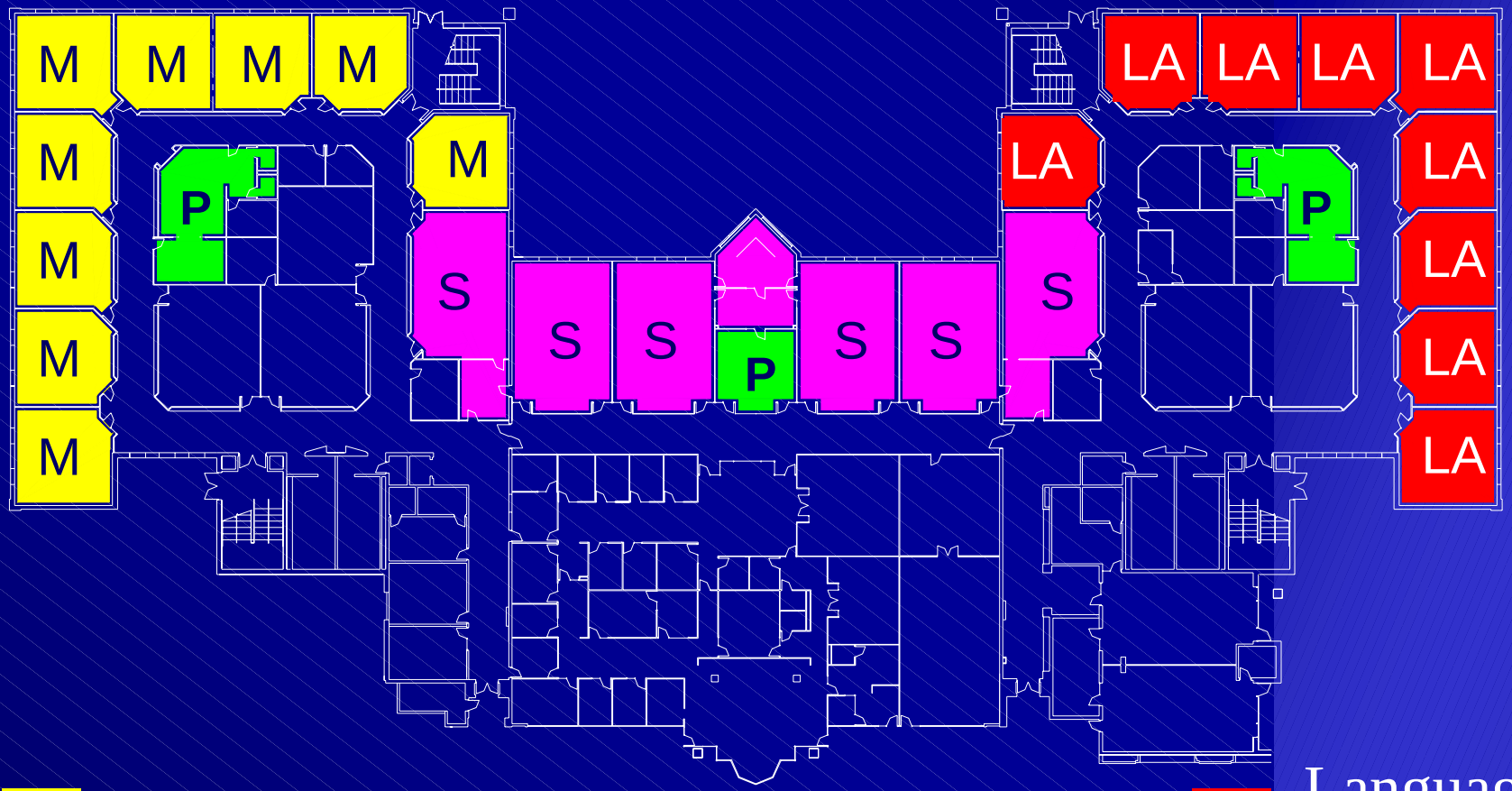
Second Floor

DUBLIN SCIOTO HIGH SCHOOL

Traditional Departmental Approach



M Mathematics Dept.

S Science Dept.

LA Language Arts Dept.

P Planning

First Floor

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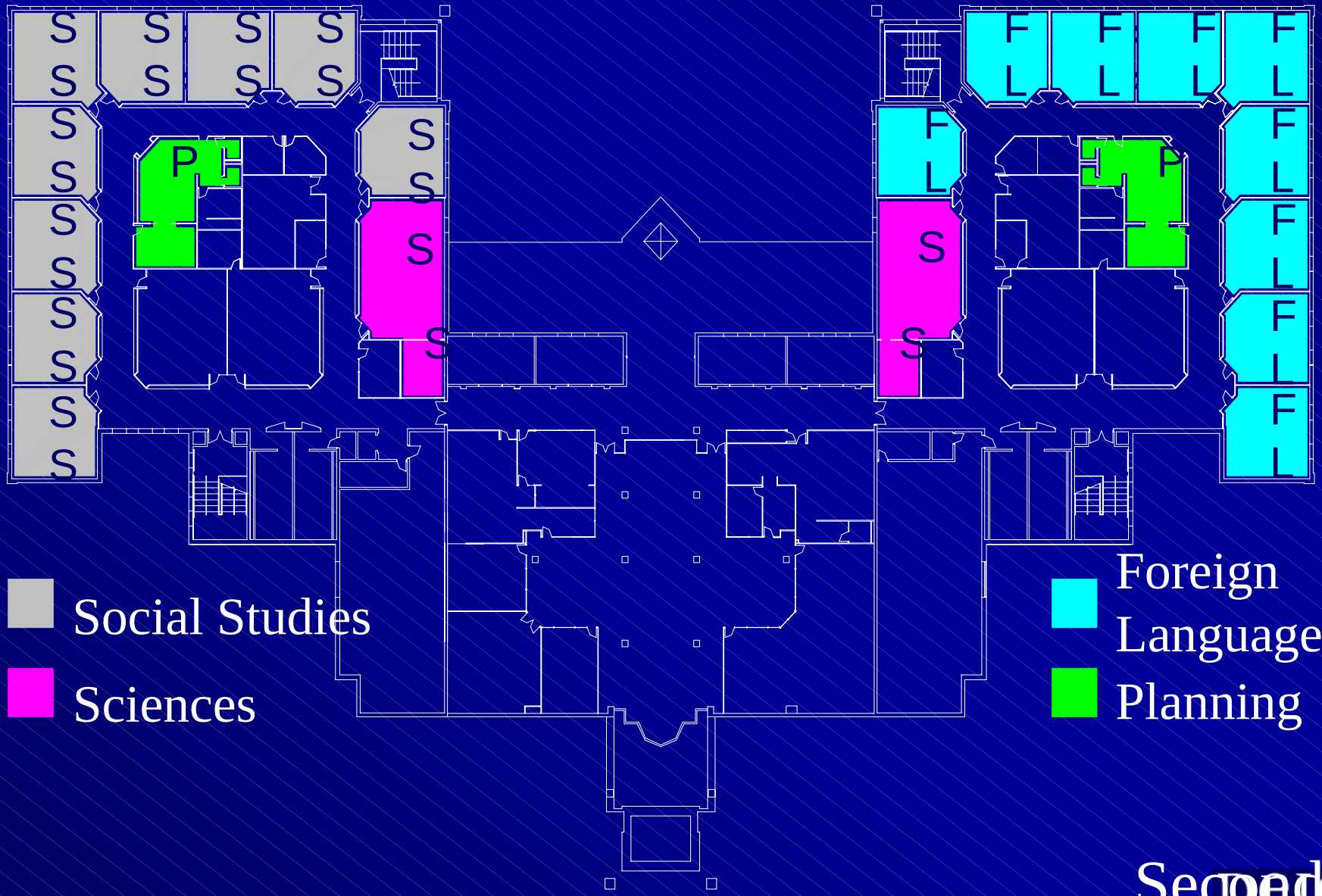
DUBLIN SCIOTO HIGH SCHOOL

Traditional Departmental Approach



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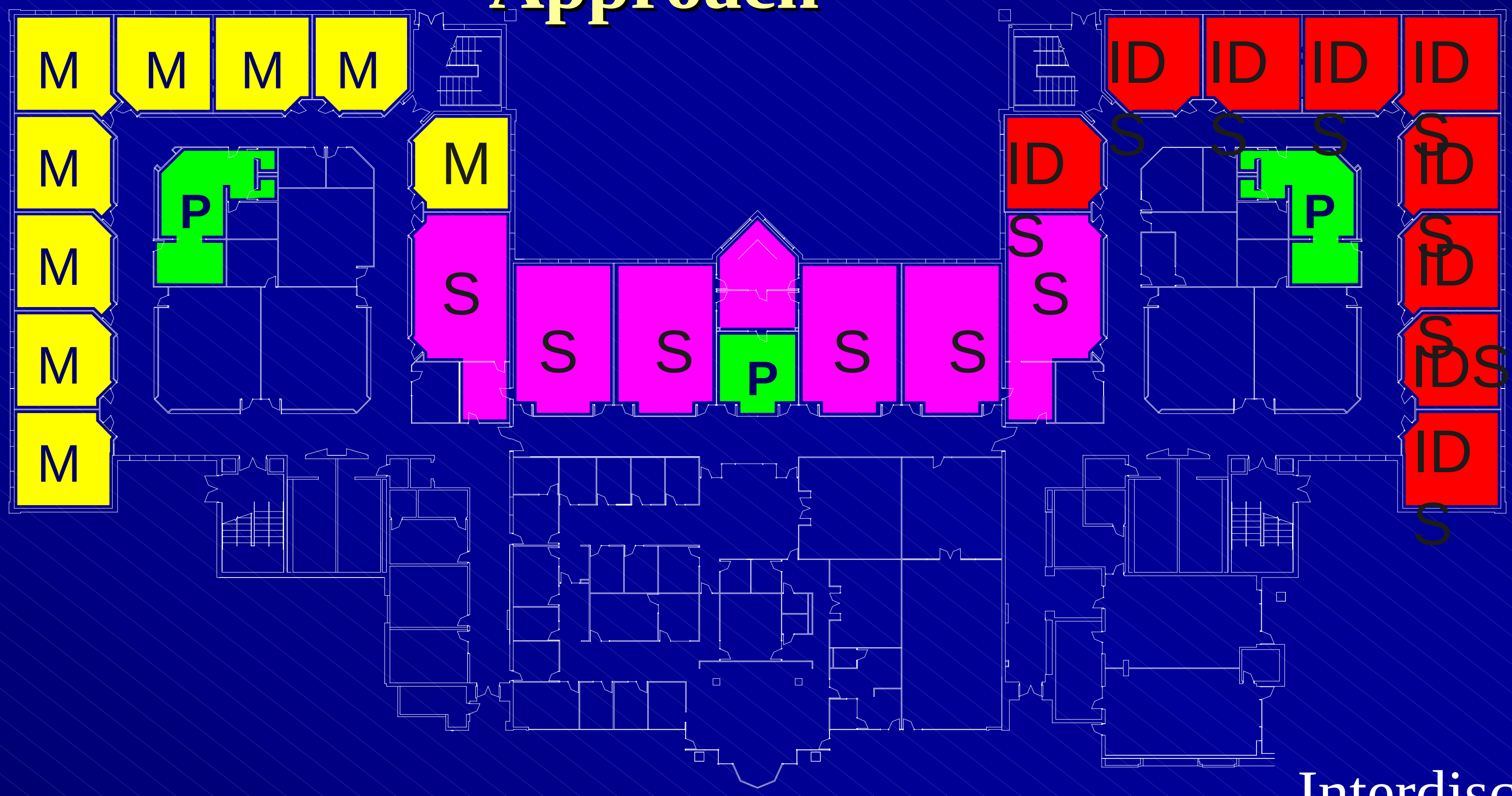
DUBLIN SCIOTO HIGH SCHOOL

Combination Restructured School Approach



Math / Soc.Studies Dept.

Science Dept.

Interdisciplinary Studies Dept.

Planning

First Floor

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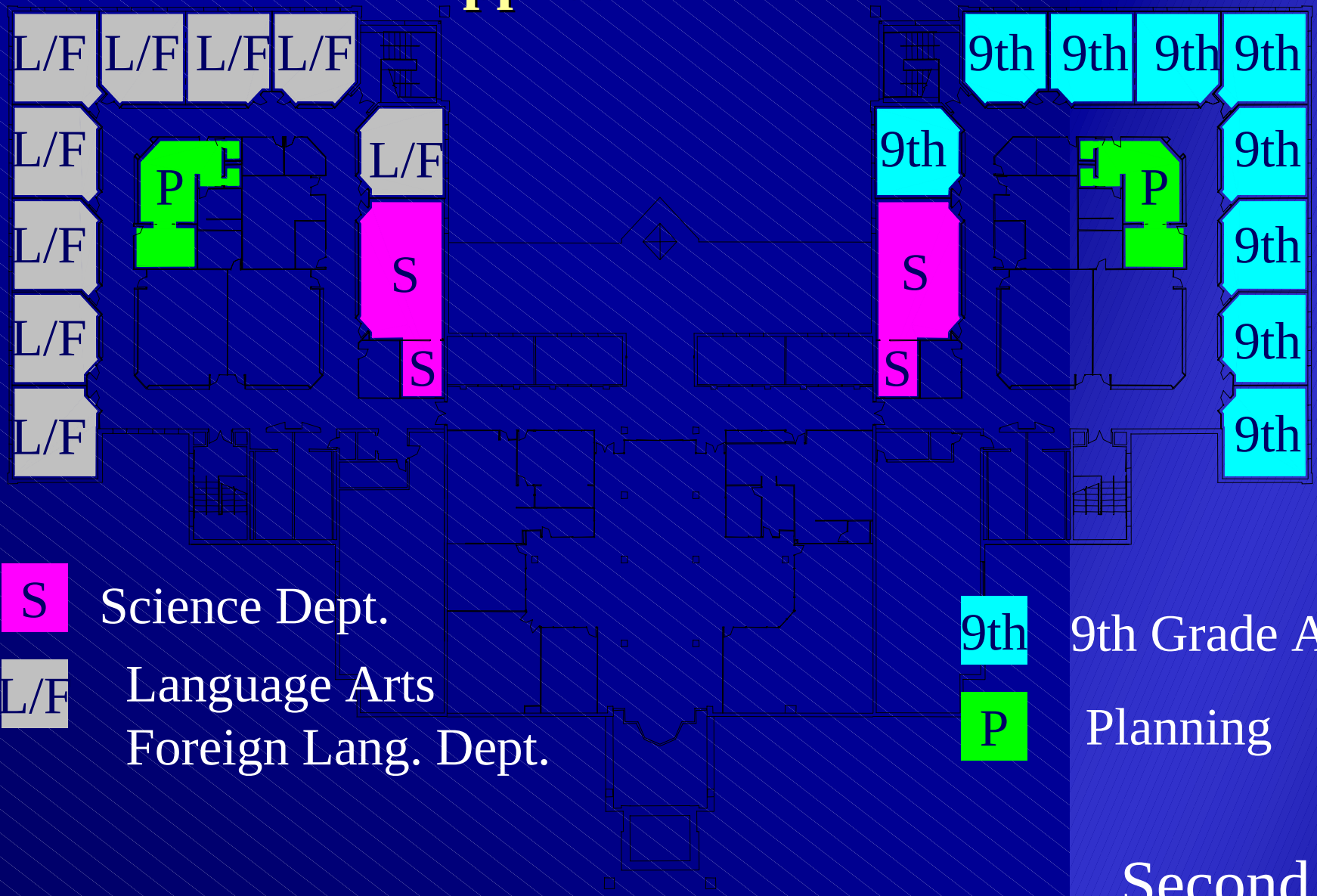
DUBLIN SCIOTO HIGH SCHOOL

Combination Restructured School Approach



Second Floor

Fanning/Howey &Associates, Inc.

CURRICULUM

DeJONG

TIME

New Organizational Patterns

- Block Scheduling
- Year-Round Schools
- Staggered Schedules
- More days per year

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Block Scheduling

The idea:

- Larger blocks of time allow for a more flexible and productive classroom instruction, along with more opportunities for using varied and interactive teaching methods.

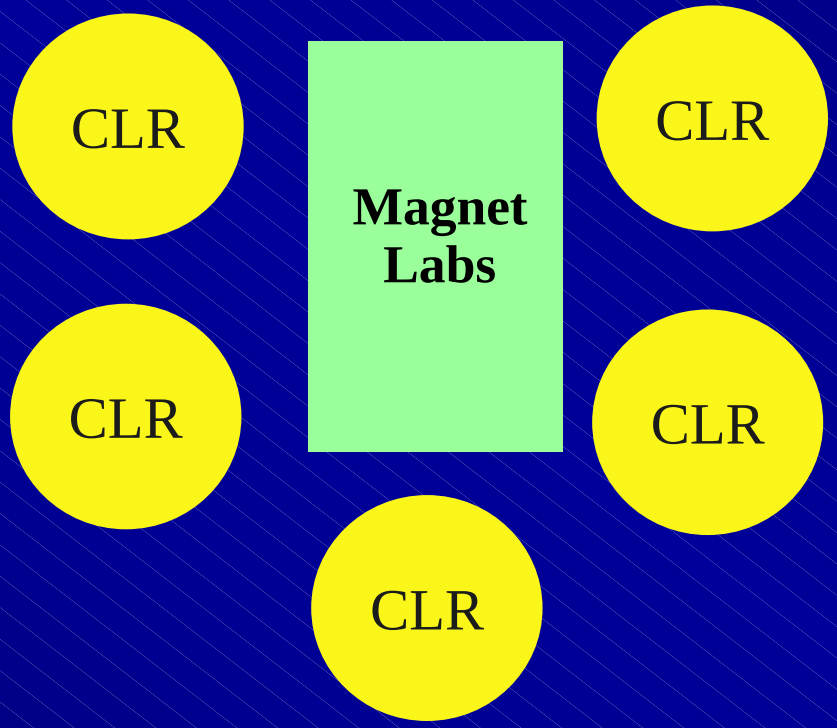
CURRICULUM

DeJONG

MAGNET SCHOOLS

DeJONG

Magnet Organizational Options



Integrating Magnet with Core Classes?

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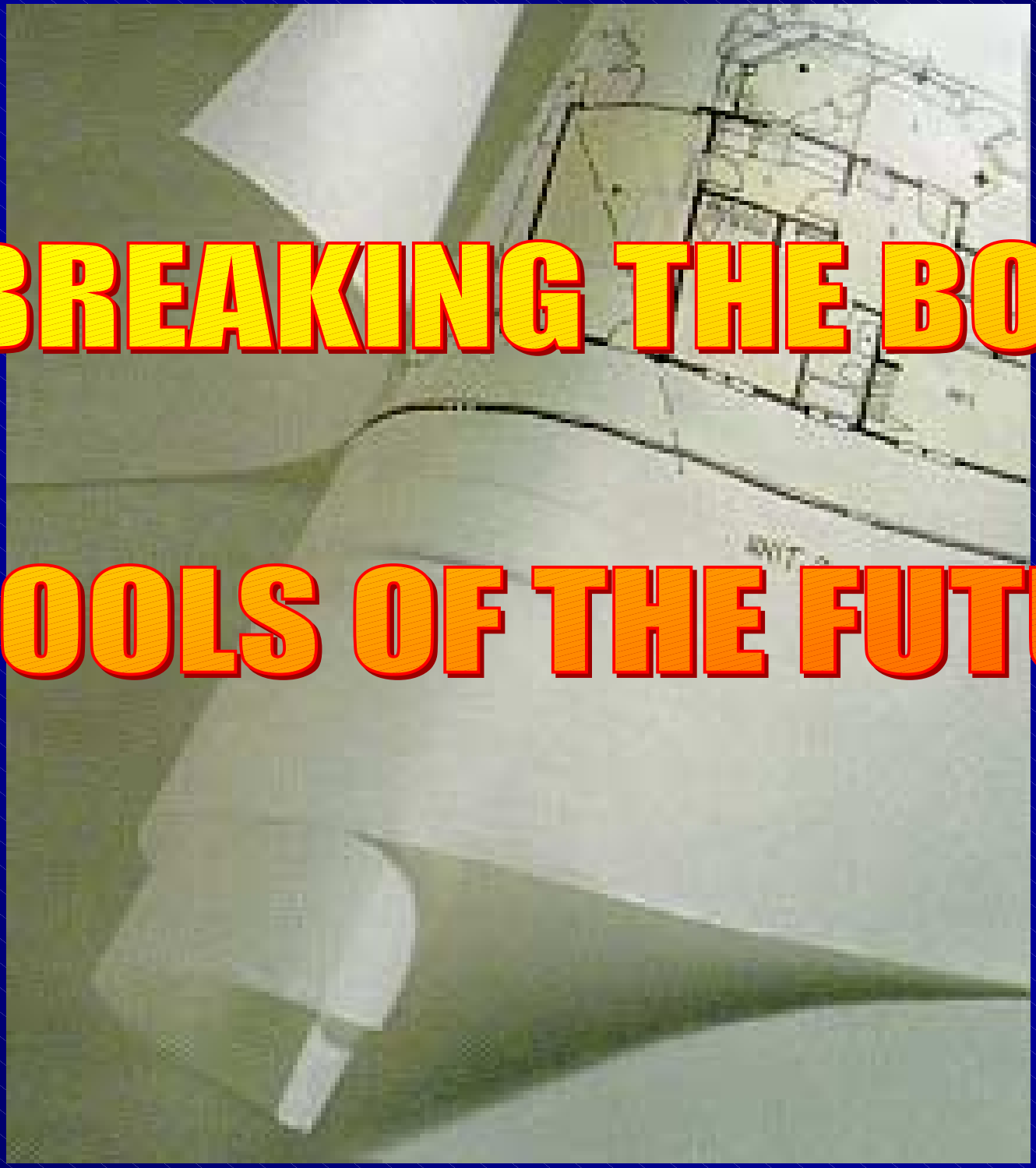
BREAKING THE BOX

SCHOOLS OF THE FUTURE?



What is Next?

Break the Box
[900 s.f./25 Students]

What do Students Really Need?

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How Do We Define a Successful Student?

- Strong Foundation of Basic Skills
- Ability to Work in Teams
- Can Manage Information
- Can Solve Problems
- Has Good Communication Skills
- Can Get Along With Others
- Can Make Their Way Out of Wet Paper Bag

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What do Students Need?

- Access to Information
- A Place to Work [Office]
- A Coach
- A Team of Colleagues to Work With
- A Place to Produce
- A Way of Presenting their Work

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Access to Information

A Place to Work [Office]

A Coach

DeJONG

A Place to Present their Work

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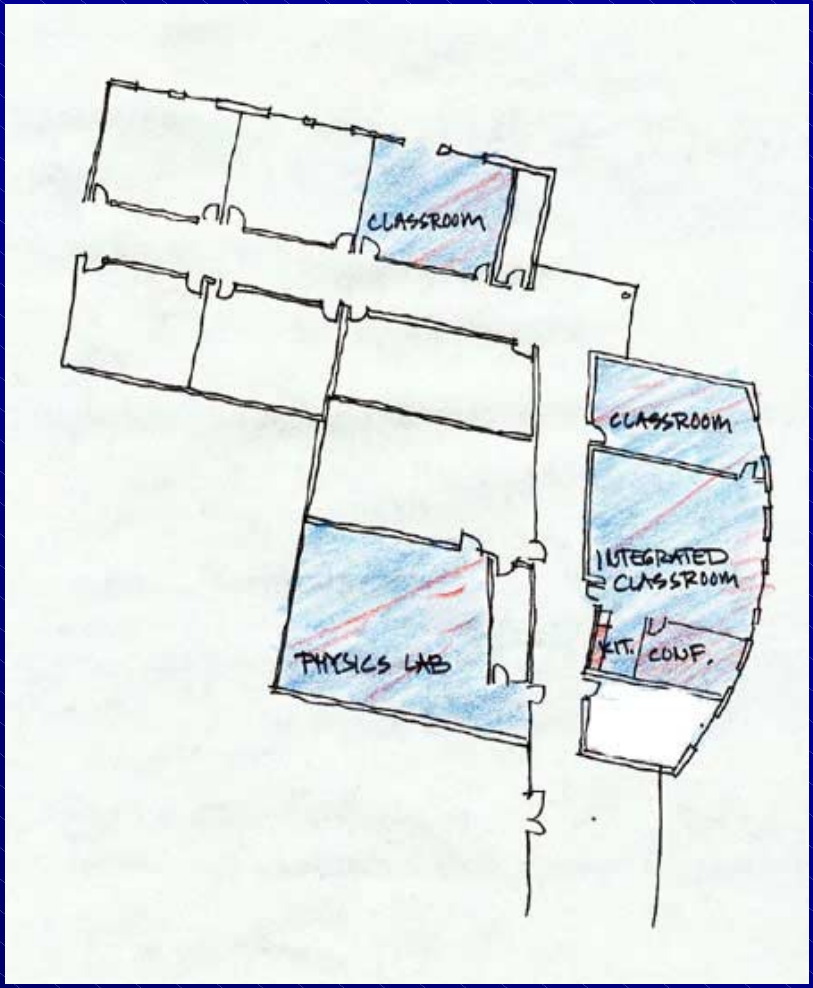
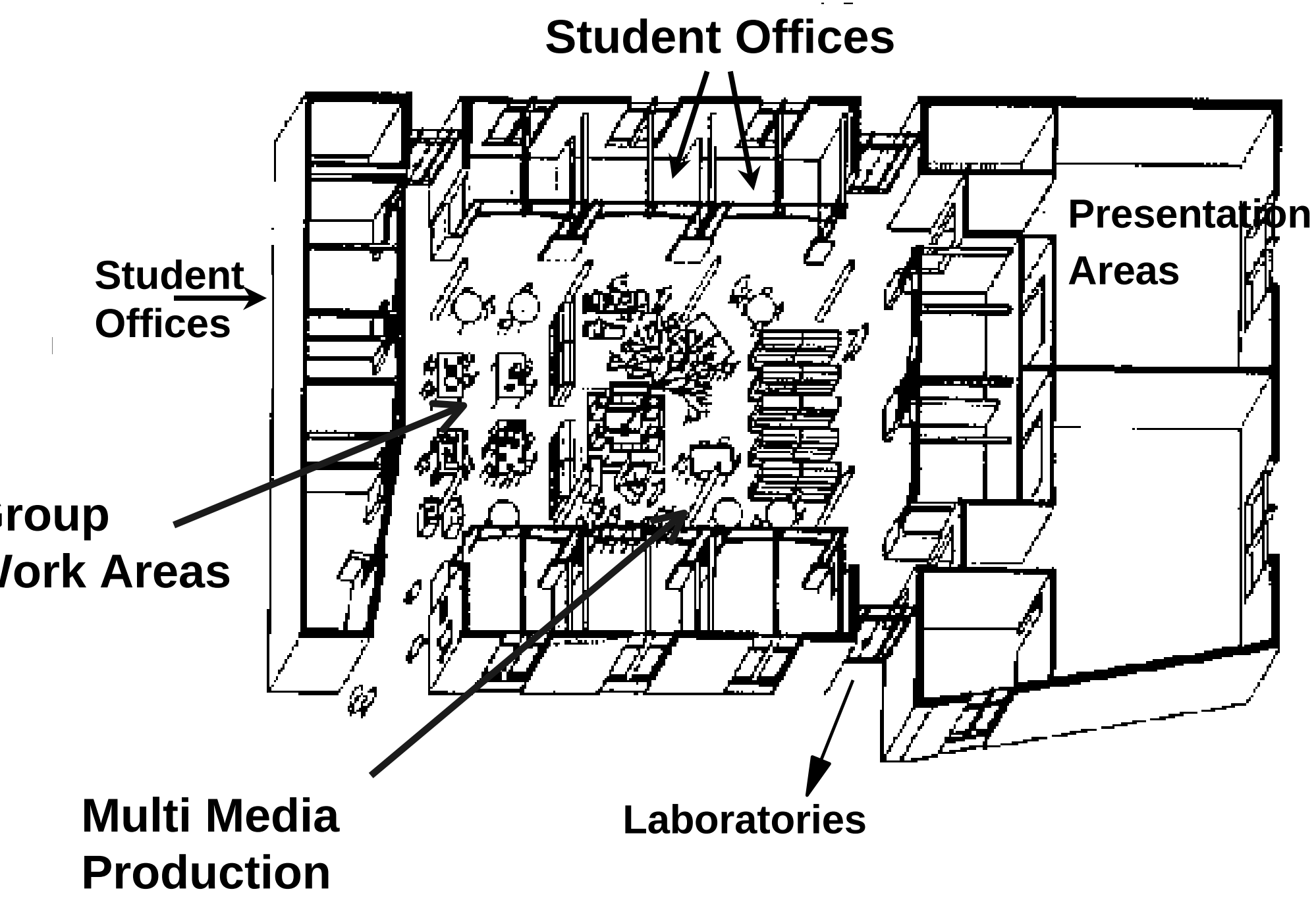
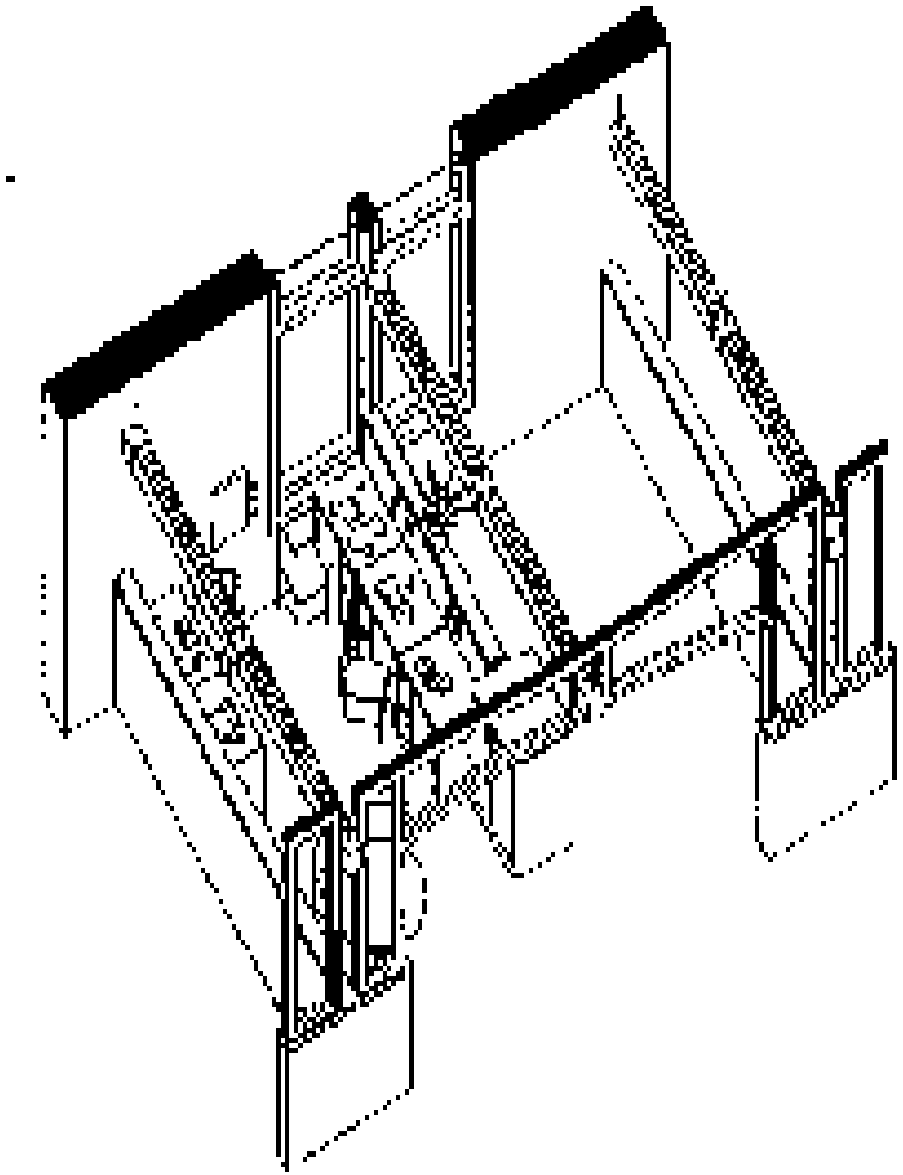
Classrooms???????????

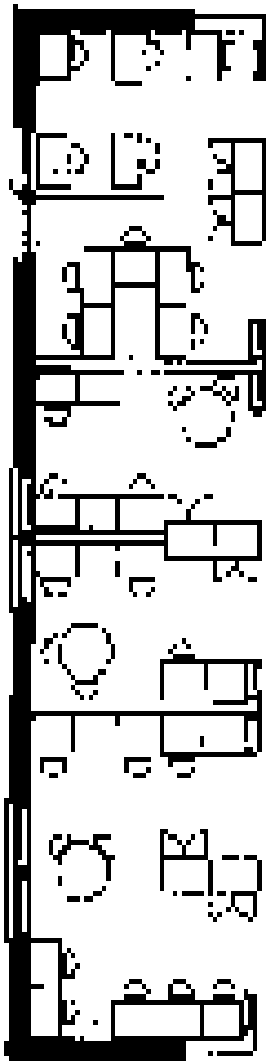

CLASSROOM
CLASSROOM
INTEGRATED CLASSROOM
PHYSICS LAB
KIT.
CONF.

The Future Learning Center

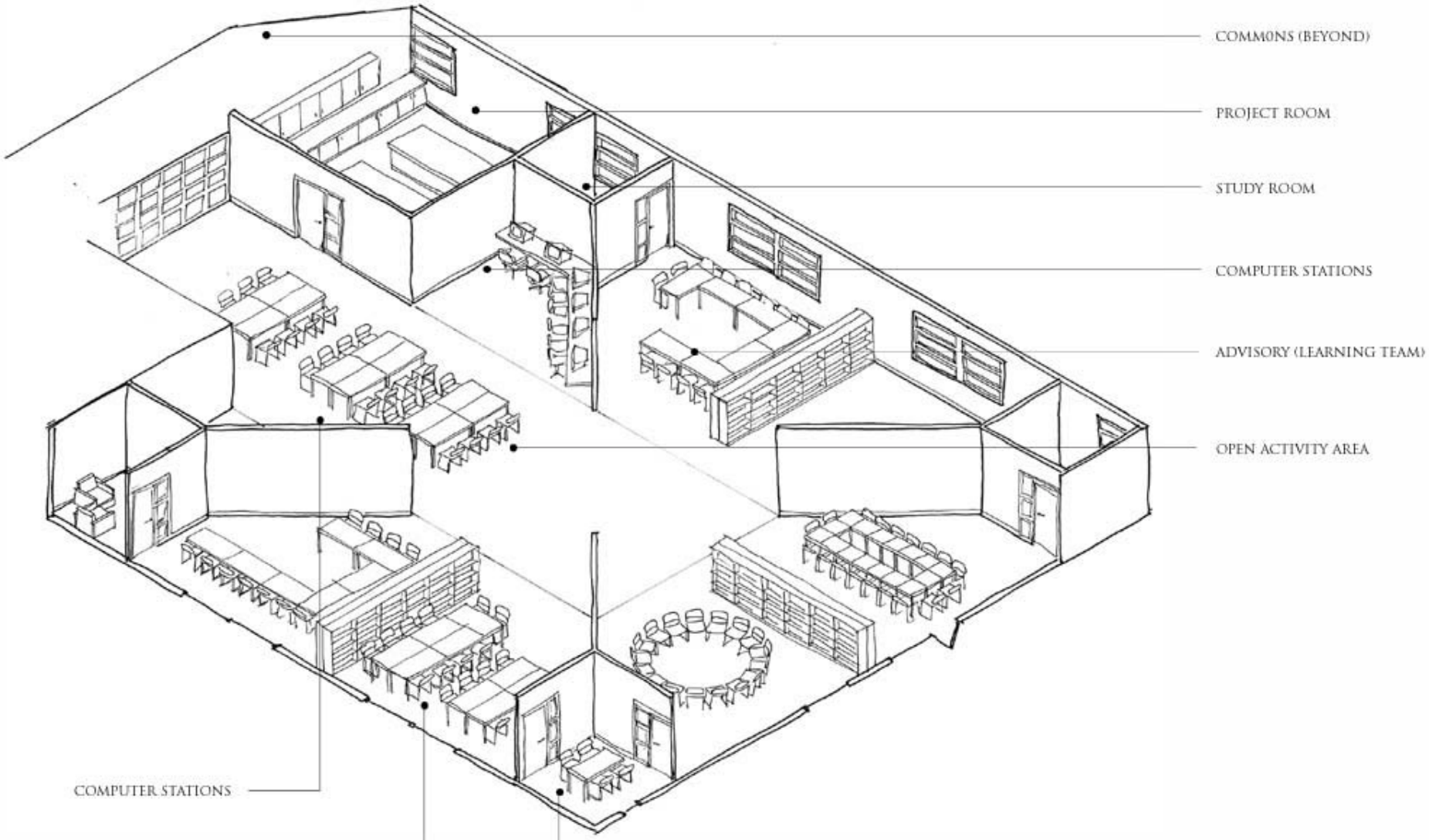


Small Group Workstation



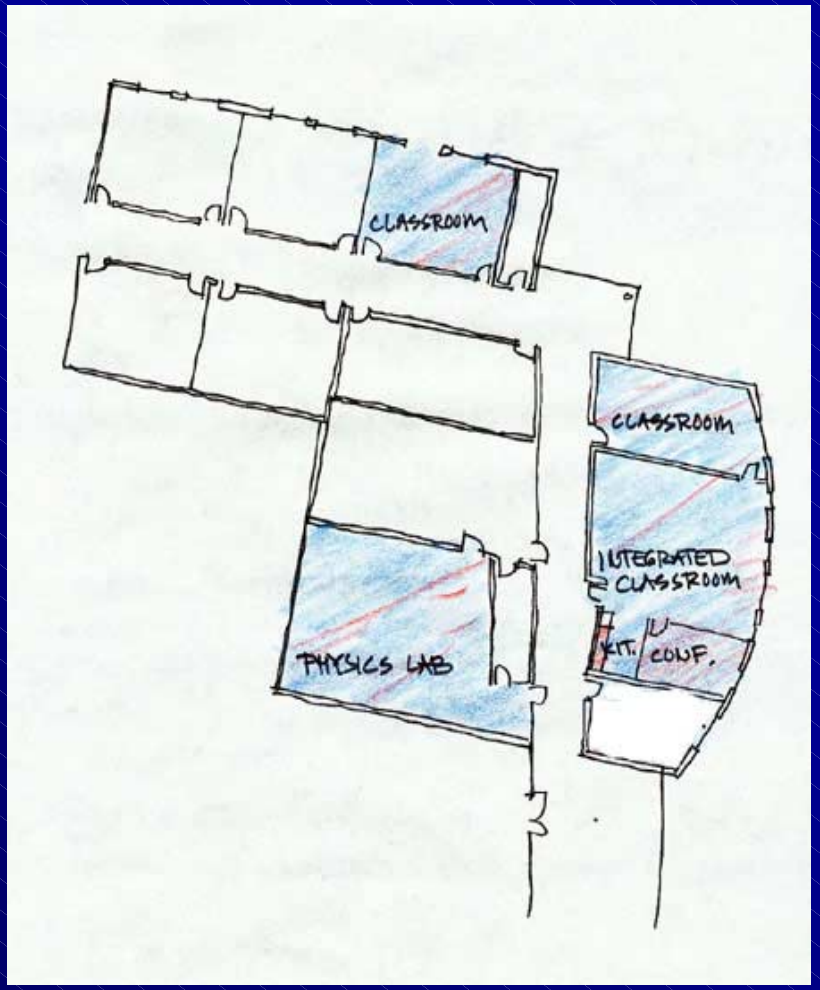


100 Student Learning Center



LEARNING
CLUSTER

Classrooms?????????????



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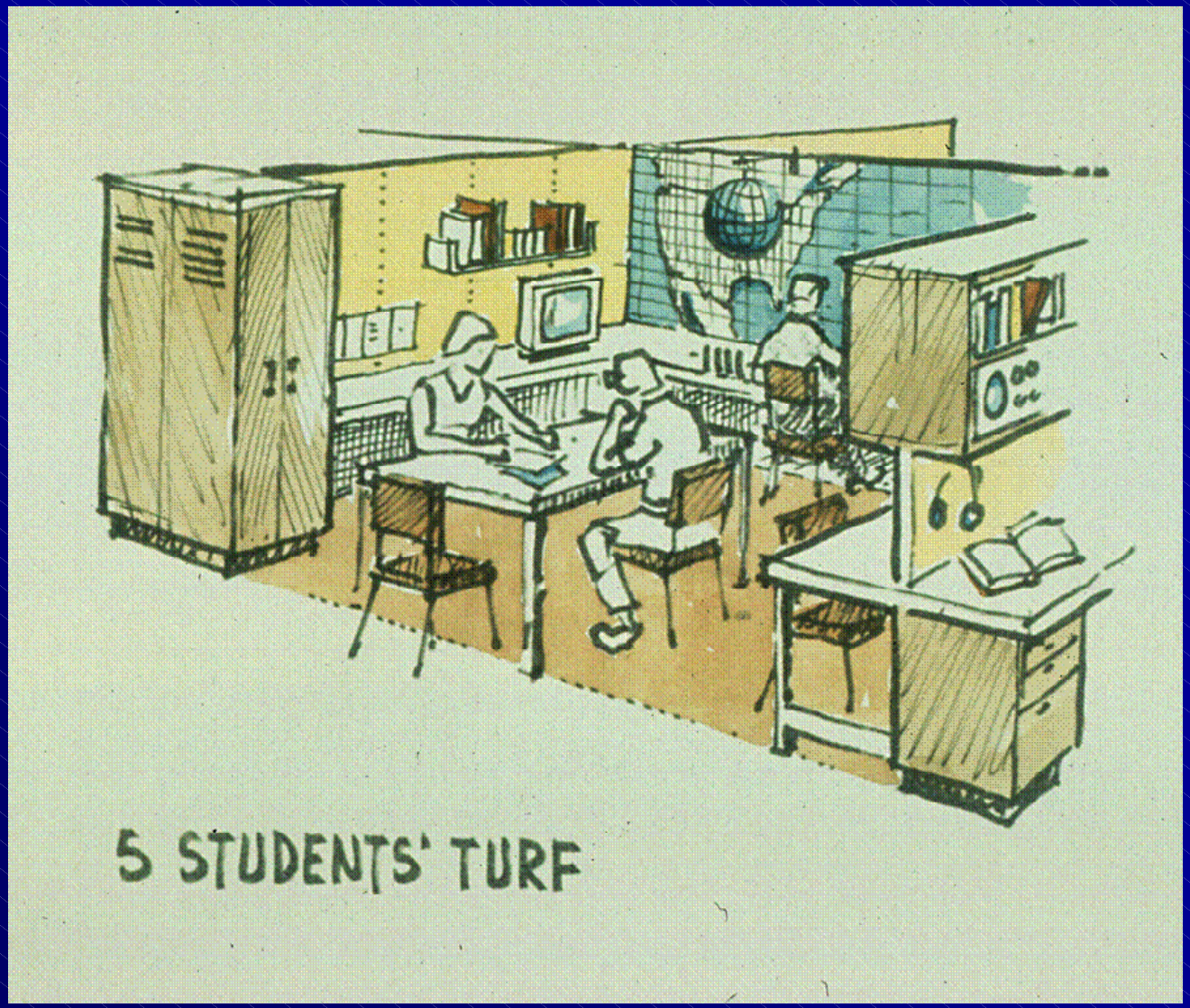
A Place to Work as a Team



This Concept
Developed
In 1959

DeJONG

Task Force to Joint Committee on Educational Facilities

Educational Framework Session

Robinson Center

May 12, 2004

9:00 a.m. – 4:00 p.m.